

# **EXHIBIT 61**

Arch I. "Chip" Carson, M.D., Ph.D.

Page 1

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NEW JERSEY

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IN RE JOHNSON & JOHNSON )  
TALCUM POWDER PRODUCTS )  
MARKETING, SALES ) MDL NO.  
PRACTICES, AND PRODUCTS ) 16-2738 (FLW) (LHG)  
LIABILITY LITIGATION )  
 )  
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 )  
THIS DOCUMENT RELATES TO )  
ALL CASES )  
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— — —  
Saturday, January 19, 2019  
— — —

Videotaped Deposition of ARCH I. "CHIP"  
CARSON, M.D., Ph.D., held at the Marriott  
Houston Medical Center, 6580 Fannin Street,  
Houston, Texas, commencing at 9:02 a.m., on  
the above date, before Michael E. Miller,  
Fellow of the Academy of Professional  
Reporters, Certified Court Reporter,  
Registered Diplomate Reporter, Certified  
Realtime Reporter and Notary Public.

— — —  
GOLKOW LITIGATION SERVICES  
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## Arch I. "Chip" Carson, M.D., Ph.D.

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Page 6			Page 8		
1	DEPOSITION EXHIBITS		1	PROCEEDINGS	
2			2	(January 19, 2019 at 9:02 a.m.)	
3	Exhibit 15 Handwritten List of	124	3	THE VIDEOGRAPHER: We are now	
4	Materials Reviewed by		4	on the record. My name is Doug	
5	Dr. Carson		5	Overstreet. I'm the videographer for	
6	Exhibit 16 1979 Chappell et al	130	6	Golkow Litigation Services. Today is	
7	Publication		7	Golkow Litigation Services. Today is	
8	Exhibit 17 2011 Reid et al Publication	159	8	January 19th, 2019. The time is	
9	Exhibit 18 2011 Camargo et al	163	9	9:02 a.m.	
10	Publication		10	This video deposition is being	
11	Exhibit 19 2013 Terry et al	192	11	held in Houston, Texas in the matter	
12	Publication		12	of Talcum Powder Litigation MDL	
13	Exhibit 20 2016 Cramer et al	195	13	No. 2738.	
14	Publication		14	The deponent is Dr. Chip	
15	Exhibit 21 IARC Classification Groups	225	15	Carson.	
16	Document		16	Will counsel please identify	
17	Exhibit 22 2017 Berge et al	243	17	themselves for the record.	
18	Publication		18	MS. O'DELL: Leigh O'Dell,	
19	Exhibit 23 2007 Langseth et al	247	19	Beasley Allen, for the plaintiffs.	
20	Publication		20	DR. THOMPSON: Margaret	
21	Exhibit 24 2016 Schildkraut et al	271	21	Thompson, Beasley Allen, for the	
22	Publication		22	plaintiffs.	
23	Exhibit 25 Excerpt from IARC	289	23	MS. KLEVORN: Amanda Klevorn,	
24	Monograph 93		24	Burns Charest, for the plaintiffs.	
				MR. ZELLERS: Michael Zellers	
Page 7			Page 9		
1	REFERENCED EXHIBITS		1	for the Johnson & Johnson defendants.	
2			2	MS. McBETH: Katherine McBeth,	
3	NUMBER	PAGE	3	Drinker Biddle & Reath, for the	
4	Exhibit .....	148	4	Johnson & Johnson defendants as well.	
5	Hopkins-28		5	MS. BOCKUS: Jane Bockus for	
6	Exhibit .....	148	6	Imerys.	
7	Pier-47		7	MR. DONATH: Jonathan Donath	
8	Exhibit .....	28	8	from Coughlin Duffy for Imerys.	
9	P-346		9	MS. APPEL: Renée Appel from	
10	--o0o--		10	Seyfarth Shaw for Personal Care	
11			11	Products.	
12			12	MS. TINSLEY: Caroline Tinsley,	
13			13	Tucker Ellis, for PTI Union, LLC and	
14			14	PTI Royston, LLC.	
15			15	THE VIDEOGRAPHER: The court	
16			16	reporter today is Mr. Mike Miller, and	
17			17	he will now swear in the witness.	
18			18	ARCH I. "CHIP" CARSON, M.D., Ph.D.,	
19			19	having been duly sworn,	
20			20	testified as follows:	
21			21	EXAMINATION	
22			22	BY MR. ZELLERS:	
23			23	Q. Can you state your name,	
24			24	please.	

3 (Pages 6 to 9)

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Page 10	Page 12
<p>1 A. Arch Carson.</p> <p>2 Q. You are a physician; is that</p> <p>3 right?</p> <p>4 A. I am.</p> <p>5 Q. A medical toxicologist?</p> <p>6 A. Yes.</p> <p>7 Q. We are here today to take your</p> <p>8 deposition in the talc MDL litigation</p> <p>9 proceedings; is that right?</p> <p>10 A. As far as I know, yes.</p> <p>11 Q. You are an expert witness for</p> <p>12 the plaintiffs in that litigation; is that</p> <p>13 right?</p> <p>14 A. Yes.</p> <p>15 Q. Did you receive a notice of</p> <p>16 deposition, which we'll mark as Exhibit 1, to</p> <p>17 appear here today?</p> <p>18 (Carson Deposition Exhibit 1</p> <p>19 marked.)</p> <p>20 A. Yes, I received a copy of this</p> <p>21 document.</p> <p>22 MS. O'DELL: And, Michael, just</p> <p>23 for the record, we just reassert all</p> <p>24 our previously served objections to</p>	<p>1 BY MR. ZELLERS:</p> <p>2 Q. As best we can, let me finish</p> <p>3 my question before you start to give your</p> <p>4 answer. I'll do the same and allow you to</p> <p>5 finish your answer before I ask you another</p> <p>6 question so our court reporter can take down</p> <p>7 what each of us say.</p> <p>8 Can you do that?</p> <p>9 A. Yes.</p> <p>10 Q. In response to the notice of</p> <p>11 deposition, which we've marked as Exhibit 1,</p> <p>12 have you brought with you certain documents</p> <p>13 here today?</p> <p>14 A. I have a collection of</p> <p>15 documents that in part respond to these</p> <p>16 requests, yes.</p> <p>17 Q. Do you have any documents in</p> <p>18 your possession that are responsive to the</p> <p>19 notice of deposition, Exhibit 1, that you</p> <p>20 have not brought here today?</p> <p>21 A. I would have to go through</p> <p>22 these things one by one, but --</p> <p>23 Q. You didn't do that before we</p> <p>24 came here today?</p>
Page 11	Page 13
<p>1 the notice.</p> <p>2 MR. ZELLERS: Thank you.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. You have given deposition</p> <p>5 testimony in the past; is that right?</p> <p>6 A. I have.</p> <p>7 Q. On how many occasions?</p> <p>8 A. Probably 30, 35.</p> <p>9 Q. You are familiar with the</p> <p>10 procedures we're going to follow today?</p> <p>11 A. More or less, I think.</p> <p>12 Q. If at any time I ask you a</p> <p>13 question and you don't understand it, tell me</p> <p>14 you don't understand it and I'll repeat it or</p> <p>15 rephrase it to try to make it clear to you.</p> <p>16 Can you do that?</p> <p>17 A. Yes.</p> <p>18 Q. If you answer a question that I</p> <p>19 ask or that any of the counsel ask, we're</p> <p>20 going to assume that you understood it; is</p> <p>21 that fair?</p> <p>22 MS. O'DELL: Object to form.</p> <p>23 A. That's fair.</p> <p>24 ///</p>	<p>1 A. I did, but the plaintiffs'</p> <p>2 attorneys --</p> <p>3 MS. O'DELL: Let me just stop</p> <p>4 you, Dr. Carson, just because</p> <p>5 discussing what we've discussed is not</p> <p>6 within the purview of this deposition.</p> <p>7 That's privileged. Let me just say --</p> <p>8 THE WITNESS: All right.</p> <p>9 MS. O'DELL: -- Dr. Carson, in</p> <p>10 response to the notice, has brought</p> <p>11 with him copies of the cited materials</p> <p>12 in his report, and that's in the</p> <p>13 binder that is to his left.</p> <p>14 He's brought with him copies of</p> <p>15 certain documents that were listed on</p> <p>16 his materials considered list. He</p> <p>17 doesn't have a physical copy of</p> <p>18 everything on his materials considered</p> <p>19 list.</p> <p>20 I brought today a thumb drive</p> <p>21 that has a copy of all the items on</p> <p>22 his materials considered list. If you</p> <p>23 would like access to that, it's</p> <p>24 available to you.</p>

4 (Pages 10 to 13)

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<p style="text-align: right;">Page 14</p> <p>1 And then in addition, he has 2 brought some additional materials that 3 he has reviewed since the service of 4 his report. 5 The only other item, as I 6 recall, on the notice of deposition 7 request for documents that has not 8 been brought to the deposition is 9 copies of invoices and Dr. Carson has 10 not sent us an invoice. That's why we 11 don't have a copy. 12 So to try to short-circuit 13 this, just to make sure since we made 14 decisions about what's produced and 15 what's not, I'll just say all that for 16 the record. And if you'd like that, 17 you're welcome to it. 18 BY MR. ZELLERS: 19 Q. Dr. Carson, you heard 20 Ms. O'Dell describe what you brought here 21 today. Is all of that accurate? 22 A. It is. 23 Q. Are you aware of there being 24 any documents or materials that are</p>	<p style="text-align: right;">Page 16</p> <p>1 Q. I'll ask you about the 2 attachments in a moment. 3 Does this report, 4 Deposition Exhibit 2, contain all of the 5 opinions that you intend to offer at any 6 trial or hearing of this matter? 7 A. In general, it contains all of 8 my opinions. I expect to expand on those 9 opinions possibly in this deposition or in 10 the future. 11 Q. Today's my opportunity to ask 12 you what your opinions are in this matter. 13 As of today, are the opinions 14 that you expressed to us set forth at any 15 trial or hearing in this matter, are they 16 contained in your report, Exhibit 2? 17 A. I have seen information that 18 has become available recently that I did not 19 have at that time this report was finalized, 20 and I have modified my opinions very slightly 21 as a result of that information. 22 Q. How have you modified your 23 opinions? 24 A. My opinions have essentially</p>
<p style="text-align: right;">Page 15</p> <p>1 responsive to the deposition notice that you 2 have not brought with you here today? 3 A. No. 4 Q. I'm trying to understand what 5 counsel for plaintiffs, Ms. O'Dell, has said, 6 so let me ask you some questions. 7 You have brought with you today 8 in a binder some of the cited materials in 9 your report; is that right? 10 A. Yes. This is intended to be a 11 complete set of the cited references, with 12 one exception. 13 Q. When you say cited 14 references -- 15 A. From my report. 16 Q. Your expert report, we will 17 mark as Exhibit 2. 18 (Carson Deposition Exhibit 2 19 marked.) 20 BY MR. ZELLERS: 21 Q. Is Deposition Exhibit 2 your 22 report in this matter? 23 A. It is. It also has 24 attachments.</p>	<p style="text-align: right;">Page 17</p> <p>1 been strengthened as they relate to the 2 causation question between perineal talcum 3 powder use and the occurrence of ovarian 4 cancers. 5 Q. Other than you believing that 6 your opinions are strengthened with respect 7 to the association between perineal talcum 8 powder use and ovarian cancer, have your 9 opinions changed at all since you prepared 10 your report, Exhibit 2? 11 A. No. 12 Q. Are there any new or additional 13 opinions as of today that you expect to 14 testify to at trial or any hearing of this 15 matter other than your report, Exhibit 2, and 16 as you have qualified that report by stating 17 that your opinions on association are 18 stronger today? 19 A. No. 20 MS. O'DELL: Object to the 21 form. 22 BY MR. ZELLERS: 23 Q. Okay. Your report has a list 24 of references that begin on page 11.</p>

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<p style="text-align: right;">Page 18</p> <p>1 Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. What are the references? What</p> <p>4 do they relate to? And by that, I mean --</p> <p>5 I'm just trying to understand what this list</p> <p>6 is.</p> <p>7 A. This is a list of references</p> <p>8 from which I gleaned information that were</p> <p>9 important to my forming opinions regarding</p> <p>10 the question that was given to me, and they</p> <p>11 contribute to pieces of the report in various</p> <p>12 ways.</p> <p>13 They don't represent a complete</p> <p>14 review that I made in preparing my report,</p> <p>15 but all are important in some way in terms of</p> <p>16 coming to my conclusions.</p> <p>17 Q. Are the references that you</p> <p>18 list in your report from page 11 up and</p> <p>19 through page 16, are those the materials that</p> <p>20 you are relying on in terms of your opinions</p> <p>21 that you're expressing in your report?</p> <p>22 MS. O'DELL: Objection to form.</p> <p>23 A. Yes.</p> <p>24 ///</p>	<p style="text-align: right;">Page 20</p> <p>1 I produced a report that I</p> <p>2 thought was responsive to the question that</p> <p>3 was given to me by the plaintiffs' attorneys,</p> <p>4 and within that report I felt it necessary to</p> <p>5 cite specific key references that contributed</p> <p>6 to items in that report.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. And those are --</p> <p>9 MS. O'DELL: Excuse me, sir.</p> <p>10 Are you finished, Dr. Carson?</p> <p>11 THE WITNESS: Yes.</p> <p>12 MS. O'DELL: Okay. Sorry.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Those are the items that you've</p> <p>15 listed under References; is that right?</p> <p>16 A. Yes.</p> <p>17 Q. Literature are other materials</p> <p>18 that you have reviewed but didn't rise to the</p> <p>19 level of you citing them as a reference for</p> <p>20 your report, correct?</p> <p>21 A. That is correct, but they do</p> <p>22 contribute information that I utilize in</p> <p>23 terms of the whole to formulate my opinions.</p> <p>24 Q. Let me mark several of the</p>
<p style="text-align: right;">Page 19</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. What, then, is the difference</p> <p>3 between the references to your report and</p> <p>4 Exhibit B, which has a caption, Literature?</p> <p>5 A. The Exhibit B represents a</p> <p>6 larger set of documents, including scientific</p> <p>7 literature, technical reports, and so forth</p> <p>8 that I reviewed in preparation of my report</p> <p>9 and the formation of my opinions; but they</p> <p>10 did not contain information that I felt</p> <p>11 necessary to cite in my report.</p> <p>12 Q. The literature that you cite to</p> <p>13 as Appendix B of your report are materials</p> <p>14 that you reviewed but are not the materials</p> <p>15 that you're specifically relying on. The</p> <p>16 materials that you're specifically relying on</p> <p>17 are set forth in your references list; is</p> <p>18 that right?</p> <p>19 MS. O'DELL: Excuse me. Object</p> <p>20 to the form, misstates his testimony.</p> <p>21 A. My opinions are based on my</p> <p>22 total review of the literature as well as my</p> <p>23 training, my professional experience and many</p> <p>24 other factors.</p>	<p style="text-align: right;">Page 21</p> <p>1 attachments to your report as separate</p> <p>2 exhibits.</p> <p>3 (Carson Deposition Exhibit 3</p> <p>4 marked.)</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Exhibit 3 is your curriculum</p> <p>7 vitae that was attached to your report; is</p> <p>8 that right?</p> <p>9 A. Yes.</p> <p>10 (Carson Deposition Exhibit 4</p> <p>11 marked.)</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Exhibit 4 is a copy of your</p> <p>14 literature list that we just discussed that</p> <p>15 is in your report; is that right?</p> <p>16 A. Yes.</p> <p>17 MS. O'DELL: Thank you.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. The one difference with</p> <p>20 Exhibit 4, your literature list that's</p> <p>21 attached to your report as Appendix B is not</p> <p>22 numbered. I've gone ahead and numbered the</p> <p>23 pages on Exhibit 4, your literature list, in</p> <p>24 case we want to refer to a specific page.</p>



## Arch I. "Chip" Carson, M.D., Ph.D.

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<p>1 Today, when I refer to</p> <p>2 products, talc products, baby powder or</p> <p>3 Shower to Shower, I'm referring to the baby</p> <p>4 powder product manufactured by Johnson &amp;</p> <p>5 Johnson Consumer Products Inc. and the Shower</p> <p>6 to Shower product formerly manufactured by</p> <p>7 Johnson &amp; Johnson Consumer Products Inc.</p> <p>8 Do you understand that?</p> <p>9 A. Yes.</p> <p>10 Q. Is your report, Exhibit 2,</p> <p>11 accurate?</p> <p>12 A. I believe so.</p> <p>13 Q. Do you believe it's complete?</p> <p>14 A. In terms of its focus, yes.</p> <p>15 Q. What do you mean in terms of</p> <p>16 its focus?</p> <p>17 A. It covers specific aspects of a</p> <p>18 larger question, and regarding those specific</p> <p>19 aspects, I believe it is complete.</p> <p>20 Q. It covers the aspects of the</p> <p>21 question that you intend to offer opinions</p> <p>22 on, correct?</p> <p>23 A. That is correct.</p> <p>24 Q. What is the question that was</p>	<p>1 binder of materials; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. The binder of materials, did</p> <p>4 you prepare that, or was it prepared for you?</p> <p>5 A. Well, I uploaded documents to a</p> <p>6 share file, and the plaintiffs' attorneys</p> <p>7 were kind enough to print those for me and</p> <p>8 assemble them in the binder.</p> <p>9 Q. In addition, you have brought</p> <p>10 with you a stack of eight or so additional</p> <p>11 references that you have on the table in</p> <p>12 front of you; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. Are those materials that were</p> <p>15 cited either as references in your report or</p> <p>16 in the literature section of your report?</p> <p>17 A. I think they're all included in</p> <p>18 one or the other of those lists.</p> <p>19 Q. Your testimony under oath is</p> <p>20 that all of the additional materials you</p> <p>21 brought here today are referred to either in</p> <p>22 your reference list, which is -- begins at</p> <p>23 page 11 of your report, or your literature</p> <p>24 list, which we've marked as Exhibit 4 and is</p>
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<p>1 given to you by counsel for plaintiffs in</p> <p>2 this litigation?</p> <p>3 A. The question is do the -- does</p> <p>4 the habitual use of talcum powder products</p> <p>5 cause ovarian cancer.</p> <p>6 Q. Were you given any other</p> <p>7 questions to answer or opine on in this</p> <p>8 litigation?</p> <p>9 A. Not specifically.</p> <p>10 Q. What do you understand habitual</p> <p>11 use of talcum powder to refer to?</p> <p>12 A. It means routine use, periodic</p> <p>13 use.</p> <p>14 Q. Over any period of time?</p> <p>15 A. Over an extended period of</p> <p>16 time.</p> <p>17 Q. What is an extended period of</p> <p>18 time?</p> <p>19 A. Months or years.</p> <p>20 Q. Any other definition that you</p> <p>21 have of habitual use?</p> <p>22 A. No.</p> <p>23 Q. Today, in response to the</p> <p>24 notice of deposition, you did bring the</p>	<p>1 Exhibit B to your report; is that right?</p> <p>2 MS. O'DELL: Objection to the</p> <p>3 form.</p> <p>4 Go ahead.</p> <p>5 A. There are a couple of new</p> <p>6 articles here that were not available at the</p> <p>7 time that I submitted my report, and I</p> <p>8 believe the literature list was also created.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Were those new materials</p> <p>11 provided to you by plaintiffs' counsel or are</p> <p>12 those materials that you did some type of</p> <p>13 literature search and found?</p> <p>14 A. One of them was provided to me</p> <p>15 by plaintiffs' counsel, but I was aware that</p> <p>16 it was coming. And -- actually, two of them</p> <p>17 were provided by plaintiffs' counsel.</p> <p>18 Q. All right. The two additional</p> <p>19 documents that were provided to you by</p> <p>20 plaintiffs' counsel, can you show those to</p> <p>21 me?</p> <p>22 A. Okay. One is the Longo report.</p> <p>23 Q. We will mark as</p> <p>24 Deposition Exhibit 5 the Longo report dated</p>



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<p>1 January 15th of 2009 [sic].</p> <p>2 (Carson Deposition Exhibit 5</p> <p>3 marked.)</p> <p>4 A. The other is the recent</p> <p>5 Fletcher, et al article.</p> <p>6 (Carson Deposition Exhibit 6</p> <p>7 marked.)</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. The Fletcher article dated</p> <p>10 January 3rd of 2019 we'll mark as Exhibit 6.</p> <p>11 This is an article from Reproductive</p> <p>12 Sciences; is that right?</p> <p>13 A. Yes. And I actually have a</p> <p>14 third.</p> <p>15 Q. All right. You have a third</p> <p>16 article that was provided to you by</p> <p>17 plaintiffs' counsel?</p> <p>18 A. Yes.</p> <p>19 (Carson Deposition Exhibit 7</p> <p>20 marked.)</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Let's mark that as</p> <p>23 Deposition Exhibit 7. Can you tell us what</p> <p>24 article that is?</p>	<p>1 Ph.D.; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. What additional articles have</p> <p>4 you brought here with you today separate and</p> <p>5 apart from your binder of materials?</p> <p>6 A. There's a copy of the IARC</p> <p>7 monographs preamble.</p> <p>8 Q. For what purpose did you bring</p> <p>9 that article?</p> <p>10 A. This discusses the general</p> <p>11 process that IARC uses in approaching a</p> <p>12 putative carcinogenic material.</p> <p>13 Q. That has previously been marked</p> <p>14 as Plaintiff Exhibit P-346 in another</p> <p>15 proceeding; is that right?</p> <p>16 A. I don't know.</p> <p>17 Q. Well, the document we're</p> <p>18 looking at has that exhibit sticker on it; is</p> <p>19 that right?</p> <p>20 A. It does.</p> <p>21 Q. What else have you brought here</p> <p>22 with you today?</p> <p>23 A. This is an article from</p> <p>24 The Lancet from 1952 titled Value of Modified</p>
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<p>1 A. This is a meta-analysis.</p> <p>2 It's -- the title is Systematic Review and</p> <p>3 Meta-Analysis of the Association Between</p> <p>4 Perineal Use of Talc and Risk of Ovarian</p> <p>5 Cancer. The lead author is Mohamed Taher.</p> <p>6 Q. The Taher paper we have marked</p> <p>7 as Exhibit 7; is that right?</p> <p>8 A. Yes.</p> <p>9 Q. This is something that you were</p> <p>10 provided by plaintiffs' counsel; is that</p> <p>11 right?</p> <p>12 A. Yes.</p> <p>13 Q. Exhibit 6, Reproductive</p> <p>14 Sciences, are you familiar with that journal?</p> <p>15 A. I'm aware that it exists.</p> <p>16 Q. Do you review that journal on a</p> <p>17 regular basis as a part of your clinical and</p> <p>18 research activities?</p> <p>19 A. No, I don't.</p> <p>20 Q. Is Reproductive Sciences a</p> <p>21 peer-reviewed journal?</p> <p>22 A. I believe it is.</p> <p>23 Q. The Exhibit 6 has as a</p> <p>24 corresponding author, Dr. Saed, S-A-E-D, a</p>	<p>1 Starch as a Substitute for Talc, and the</p> <p>2 first author is J.D.P. Graham.</p> <p>3 Q. Why did you bring that article?</p> <p>4 A. This is an older article that</p> <p>5 discusses the suitability of substituting</p> <p>6 cornstarch materials for talc due to</p> <p>7 perceived issues with talc.</p> <p>8 Q. Is this an article that you had</p> <p>9 cited previously, either in your references</p> <p>10 or your list of literature?</p> <p>11 A. I did not cite it in my report.</p> <p>12 I don't know -- I don't recall if it's in the</p> <p>13 literature list or not.</p> <p>14 (Carson Deposition Exhibit 8</p> <p>15 marked.)</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Why did you decide to bring</p> <p>18 that with you here today?</p> <p>19 A. It is in the literature list.</p> <p>20 I ran across it last night, and</p> <p>21 I thought I might need to refer to it during</p> <p>22 the deposition.</p> <p>23 Q. What other documents or</p> <p>24 materials have you brought other than your</p>

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<p>1 binder of materials?</p> <p>2 A. I have here a copy of the</p> <p>3 recent Canadian position on the safety of</p> <p>4 talcum powder and its relationship to ovarian</p> <p>5 cancer.</p> <p>6 Q. When did you review that</p> <p>7 document?</p> <p>8 A. A couple weeks ago, I think.</p> <p>9 Q. Is that a document that you</p> <p>10 were provided by plaintiffs' counsel?</p> <p>11 A. It was.</p> <p>12 Q. Can I see the document, please?</p> <p>13 We'll mark the draft screening assessment</p> <p>14 from Health Canada dated December 18th of</p> <p>15 2018 as Exhibit 9.</p> <p>16 (Carson Deposition Exhibit 9</p> <p>17 marked.)</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Any other documents?</p> <p>20 A. I have a copy of the letter</p> <p>21 from the FDA from April 1st, 2014 responding</p> <p>22 to positions -- petitions for labeling.</p> <p>23 Q. This is a letter that has a</p> <p>24 stamp on it on the first page, April 1st,</p>	<p>1 talcum powder and ovarian cancer, is</p> <p>2 something that you undertook when you were</p> <p>3 retained by plaintiffs' counsel and asked to</p> <p>4 address the question they gave to you?</p> <p>5 A. Yes, it is.</p> <p>6 Q. We will mark the article by</p> <p>7 Blount as Exhibit 11.</p> <p>8 (Carson Deposition Exhibit 11</p> <p>9 marked.)</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. And you have one more; is that</p> <p>12 right?</p> <p>13 A. Yes, one more, which is -- this</p> <p>14 is an article from the American Journal of</p> <p>15 Obstetrics and Gynecology from 1974 titled</p> <p>16 The Ovarian Mesothelioma. It's authored by</p> <p>17 Parmley and Woodruff.</p> <p>18 Q. We'll mark that as Exhibit 12.</p> <p>19 (Carson Deposition Exhibit 12</p> <p>20 marked.)</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Exhibit 12, is this an article</p> <p>23 that was cited previously by you in either</p> <p>24 your references or your literature list?</p>
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<p>1 2014, from -- or strike that -- to</p> <p>2 Dr. Epstein from the FDA; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Let's mark that as Exhibit 10.</p> <p>5 (Carson Deposition Exhibit 10</p> <p>6 marked.)</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. What else?</p> <p>9 A. I have an article authored by</p> <p>10 A.M. Blount which is titled Amphibole Content</p> <p>11 of Cosmetic and Pharmaceutical Talcs that was</p> <p>12 published in Environmental Health</p> <p>13 Perspectives in 1991.</p> <p>14 Q. Is that a journal that you</p> <p>15 review on a regular basis as part of either</p> <p>16 your clinical practice or your research</p> <p>17 activities?</p> <p>18 A. That one I do look at pretty</p> <p>19 much.</p> <p>20 Q. Is this an article you were</p> <p>21 aware of back in 1991?</p> <p>22 A. No. At least I don't recall.</p> <p>23 Q. Is it fair that your review of</p> <p>24 this literature, the literature relating to</p>	<p>1 A. Yes.</p> <p>2 Q. For what -- strike that.</p> <p>3 Is this a document that you</p> <p>4 chose to bring today or were you provided it</p> <p>5 by plaintiffs' counsel?</p> <p>6 A. This is another one I ran</p> <p>7 across last night and decided to bring along</p> <p>8 to the depo.</p> <p>9 Q. Same questions with respect to</p> <p>10 the Blount article, Exhibit 11: Is this an</p> <p>11 article you cite in your references or</p> <p>12 literature?</p> <p>13 A. In the literature, yes.</p> <p>14 Q. For what purpose have you</p> <p>15 brought this with you today?</p> <p>16 A. I thought I might want to refer</p> <p>17 to it in response to questions here.</p> <p>18 Q. Exhibit 10, the letter from the</p> <p>19 FDA to Dr. Epstein, April of 2014, for what</p> <p>20 purpose have you brought that here with you</p> <p>21 today?</p> <p>22 A. I thought I might want to refer</p> <p>23 to it in response to questioning.</p> <p>24 Q. The documents that you have</p>

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<p>1 brought here with you today are documents 2 that you wanted to have available to try to 3 respond to the questions that I may ask you? 4 A. Yes. 5 Q. These documents you all 6 believe -- strike that. 7 The documents that you've 8 identified and you've brought with you -- 9 have brought with you today, you believe 10 those are supportive of the opinions that you 11 are rendering in this matter; is that right? 12 A. Yes. 13 Q. The documents on your 14 literature list, what we have marked as 15 Exhibit 4, are those documents that were 16 provided to you by plaintiffs' counsel? 17 A. Some were. 18 Q. The documents on this list that 19 were not provided by plaintiffs' counsel, did 20 you find those through a literature search? 21 A. Yes. 22 Q. Are you able to distinguish for 23 us which documents on your literature list, 24 Exhibit 4, came from plaintiffs' counsel and</p>	<p>1 wouldn't be able to tell you for sure. I'm 2 sure I ran across these in my own literature 3 search. 4 Q. Deposition Exhibit 13, we will 5 mark the thumb drive that plaintiffs' counsel 6 has brought here today. 7 (Carson Deposition Exhibit 13 8 marked.) 9 BY MR. ZELLERS: 10 Q. Do you, Dr. Carson, have an 11 understanding of what's on the thumb drive 12 we've marked as Exhibit 13? 13 A. My understanding is this is 14 copies of the documents on the literature 15 list. 16 Q. When were you first retained by 17 anyone regarding the talc/ovarian cancer 18 litigation? 19 A. In October of 2018. 20 Q. Who contacted you? 21 A. I was contacted by an attorney 22 named Russ Abney. 23 Q. Who is Mr. Abney, if you know? 24 A. Mr. Abney is a lawyer who used</p>
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<p>1 which items on the literature list you came 2 up with? 3 A. To some extent. 4 Q. So if we went through item by 5 item, you believe you could distinguish 6 between what was provided to you by 7 plaintiffs and what you found on your own? 8 A. For some, but not all of them. 9 Q. Have you reviewed all of the 10 materials that are listed on your literature 11 list? 12 A. I have reviewed all of them, 13 yes. 14 Q. Have you reviewed all of the 15 materials that are on your reference list? 16 A. Yes. 17 Q. The materials on your reference 18 list, is it the same that some were provided 19 to you by plaintiffs' counsel and some you 20 found on your own? 21 A. I think there may be one or two 22 references that I didn't have before I saw 23 them in the share file that may have been 24 provided by plaintiffs' counsel, but I</p>	<p>1 to work in the Houston area and with whom I 2 had some dealings years ago; and since that 3 time he has become involved in this talc 4 litigation in some way, was aware of me as a 5 potential expert witness, and contacted me 6 regarding my interest and availability. 7 Q. What matters have you worked on 8 with Mr. Abney in the past? 9 A. I think it would have been back 10 in the 1990s, and I frankly don't recall what 11 cases we worked on, but there were one or 12 maybe two cases. 13 Q. When in October of 2018 were 14 you contacted by Mr. Abney? 15 MS. O'DELL: Object to the 16 form. 17 A. I believe it was either the 18 14th or 15th of October. 19 BY MR. ZELLERS: 20 Q. How do you remember with that 21 precision? 22 A. I have an e-mail that relates 23 to a phone call which was our initial 24 contact.</p>

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<p style="text-align: right;">Page 38</p> <p>1 Q. Mr. Abney at some point asked</p> <p>2 you to address the question that you told us</p> <p>3 before: Does the habitual use of talcum</p> <p>4 powder cause ovarian cancer?</p> <p>5 Is that right?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Well, he talked to me generally</p> <p>9 about the case that was proceeding, and I</p> <p>10 discussed with him what my understanding of</p> <p>11 those things was and what the kind of</p> <p>12 opinions I would be able to render would be.</p> <p>13 And he suggested that he set up a meeting</p> <p>14 between me and members of plaintiffs'</p> <p>15 counsel.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. When Mr. Abney called you</p> <p>18 middle of October of 2018, talcum powder and</p> <p>19 any relationship or association that it may</p> <p>20 have to ovarian cancer had not been a focus</p> <p>21 of your research or study; is that right?</p> <p>22 A. That's right.</p> <p>23 Q. It had not been a part of your</p> <p>24 clinical practice, right?</p>	<p style="text-align: right;">Page 40</p> <p>1 doing a review? What does that mean?</p> <p>2 A. Well, I felt that I was hired</p> <p>3 as a witness at that point and that's when I</p> <p>4 would begin my billable hours on this case.</p> <p>5 Q. When was that? Sometime in</p> <p>6 later October of -- late October of 2018?</p> <p>7 A. It was within a few days after</p> <p>8 our first meeting, still in October.</p> <p>9 Q. What did you do to answer the</p> <p>10 question? What was your methodology?</p> <p>11 A. Well, initially I decided to do</p> <p>12 a general literature search on the question</p> <p>13 to see what research had been performed, what</p> <p>14 reports had been written, what the quality of</p> <p>15 that research was.</p> <p>16 Q. When did you start that?</p> <p>17 A. Immediately. I was curious.</p> <p>18 I began to assemble the</p> <p>19 available literature and review it on a</p> <p>20 piecemeal basis through the subsequent time</p> <p>21 period; the next couple of weeks I reviewed a</p> <p>22 lot of it.</p> <p>23 Q. What did you search for when</p> <p>24 you did this general literature search?</p>
<p style="text-align: right;">Page 39</p> <p>1 A. That's correct.</p> <p>2 Q. When did you meet with the</p> <p>3 larger group of plaintiffs' counsel?</p> <p>4 A. I believe we had a telephone</p> <p>5 meeting on the 16th of October. I'm not</p> <p>6 sure. I have to --</p> <p>7 Q. That's -- right now I just want</p> <p>8 estimates.</p> <p>9 A. Okay.</p> <p>10 Q. And so I don't -- as long as</p> <p>11 you're reasonably comfortable that it was in</p> <p>12 that time frame.</p> <p>13 A. It was mid October.</p> <p>14 Q. That's fine.</p> <p>15 When were you asked the</p> <p>16 question that the plaintiffs' lawyers wanted</p> <p>17 you to try to answer in this litigation?</p> <p>18 A. Well, after the meeting we</p> <p>19 parted ways and then made contact again a few</p> <p>20 days later, and I was told that they were</p> <p>21 interested in me going ahead and doing a</p> <p>22 review and starting to establish opinions.</p> <p>23 Q. What do you mean by they</p> <p>24 authorized you or were comfortable with you</p>	<p style="text-align: right;">Page 41</p> <p>1 A. I searched under various search</p> <p>2 terms, including "talc," including "ovarian</p> <p>3 cancer," the relationship between the two.</p> <p>4 As I became more familiar with the</p> <p>5 literature, I expanded that search into other</p> <p>6 topics.</p> <p>7 As I became -- I was already</p> <p>8 aware of issues related to the inclusion of</p> <p>9 asbestos in talc deposits, and so I expanded</p> <p>10 my search into that part of the literature</p> <p>11 that relates to asbestos in talc or asbestos</p> <p>12 in ovarian cancer.</p> <p>13 As I felt my opinions would</p> <p>14 need to extend into cancer and carcinogenesis</p> <p>15 in general, I did some search into ovarian</p> <p>16 cancer specifically and general</p> <p>17 carcinogenesis to see what the current state</p> <p>18 of the art was regarding that in the</p> <p>19 literature.</p> <p>20 I looked at some issues of</p> <p>21 mining practices.</p> <p>22 I looked at the Johnson &amp;</p> <p>23 Johnson website. There's a webpage regarding</p> <p>24 talc and ovarian cancer that I looked at.</p>

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<p>1 I looked through old notes and</p> <p>2 lecture files that I had for information that</p> <p>3 I've used or accessed previously in my</p> <p>4 professional capacity for information that</p> <p>5 was pertinent.</p> <p>6 Just a very dendritic kind of</p> <p>7 extensive search.</p> <p>8 Q. You reviewed these materials</p> <p>9 that you have told us about and then did you</p> <p>10 prepare your report?</p> <p>11 A. At that point I -- well, the</p> <p>12 literature review took several stages.</p> <p>13 Typically when you perform a review like</p> <p>14 this, you end up with a -- I do a very</p> <p>15 general sort of approach to a review, so I</p> <p>16 get much more than will be pertinent to my</p> <p>17 review eventually.</p> <p>18 I find that a valuable approach</p> <p>19 because it allows me to find things I</p> <p>20 wouldn't otherwise find or look for or know</p> <p>21 to look for.</p> <p>22 And then I'm able to cull</p> <p>23 through that information and discard pieces</p> <p>24 of the search materials that are not relevant</p>	<p>1 review of draft versions of my report and</p> <p>2 comments, in particular --</p> <p>3 Q. Don't tell me about the</p> <p>4 comments.</p> <p>5 A. Okay.</p> <p>6 Q. I don't want to know what the</p> <p>7 lawyers may have told you.</p> <p>8 Did the comments come from the</p> <p>9 lawyers for plaintiffs or did they come from</p> <p>10 other people?</p> <p>11 A. They came from the lawyers.</p> <p>12 They also came from a few of my colleagues.</p> <p>13 Q. Did you share your report with</p> <p>14 some of your colleagues?</p> <p>15 A. I let a few people read it and</p> <p>16 I talked to them about it.</p> <p>17 Q. Are the opinions your opinions?</p> <p>18 A. Yes, they are.</p> <p>19 Q. Have you told me, you know,</p> <p>20 generally what you have done to formulate</p> <p>21 your opinions in this matter?</p> <p>22 A. Yes, I think so.</p> <p>23 Q. You did all of this over a</p> <p>24 30-day period; is that right?</p>
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<p>1 or interesting to me and then refine my</p> <p>2 search and redo it, extending it into</p> <p>3 different areas that have now become</p> <p>4 pertinent in my opinion, until I satisfy</p> <p>5 myself that I have pretty much covered the</p> <p>6 waterfront so to speak in terms of a</p> <p>7 literature review.</p> <p>8 Q. You did your literature review.</p> <p>9 You reviewed the Johnson &amp; Johnson website</p> <p>10 and the other materials that you have told us</p> <p>11 about.</p> <p>12 Did you then formulate your</p> <p>13 opinions and set them down in your report</p> <p>14 which we marked as Exhibit 2?</p> <p>15 A. I did. I began writing as I</p> <p>16 reviewed the literature and continued to take</p> <p>17 notes which, through a continuous editing</p> <p>18 process, eventually became my report.</p> <p>19 Q. Did you prepare your report?</p> <p>20 A. I did.</p> <p>21 Q. Did anyone assist you in the</p> <p>22 preparation of your report?</p> <p>23 A. No one assisted me in the</p> <p>24 preparation of my report. I did receive</p>	<p>1 A. Yes.</p> <p>2 Q. All right. You have no</p> <p>3 invoices, correct?</p> <p>4 A. That's correct.</p> <p>5 Q. Is it typical that you'll work</p> <p>6 on a matter for some number of months and not</p> <p>7 generate any invoices?</p> <p>8 A. Yes.</p> <p>9 Q. You are billing your time at</p> <p>10 what rate?</p> <p>11 A. \$450 per hour.</p> <p>12 Q. Can you estimate for us the</p> <p>13 number of hours that you have spent doing</p> <p>14 your literature review, formulating your</p> <p>15 opinions, and writing your report?</p> <p>16 A. There's still some tallying I</p> <p>17 need to do from my calendar, but it's between</p> <p>18 150 and 180 hours.</p> <p>19 Q. Does that include your meetings</p> <p>20 and communications with plaintiffs' counsel?</p> <p>21 A. Yes, that's up until today.</p> <p>22 Q. Other than meeting with</p> <p>23 Mr. Abney or talking with Mr. Abney -- did</p> <p>24 you ever meet with Mr. Abney face-to-face?</p>

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<p style="text-align: right;">Page 46</p> <p>1 A. No.</p> <p>2 Q. What other plaintiff lawyers</p> <p>3 have you met with or talked with as part of</p> <p>4 your formulating your opinions and doing your</p> <p>5 literature review?</p> <p>6 A. We've had a number of</p> <p>7 conference calls where there were several of</p> <p>8 these attorneys' colleagues on the line, but</p> <p>9 in terms of in-person meetings, those have</p> <p>10 been with Ms. O'Dell and Ms. Thompson,</p> <p>11 Dr. Thompson.</p> <p>12 Q. How many meetings have you had</p> <p>13 with Ms. O'Dell?</p> <p>14 A. Three.</p> <p>15 Q. How many meetings have you had</p> <p>16 with Dr. Thompson?</p> <p>17 A. Three.</p> <p>18 Q. Did you know Dr. Thompson</p> <p>19 before you were retained in this matter?</p> <p>20 A. I did not.</p> <p>21 Q. Any other plaintiff lawyers in</p> <p>22 this litigation that you are aware of --</p> <p>23 strike that.</p> <p>24 Any other plaintiff lawyers in</p>	<p style="text-align: right;">Page 48</p> <p>1 A. I have not had any discussions</p> <p>2 with Dr. Dydek. We may have met previously,</p> <p>3 but I don't recall.</p> <p>4 Q. Any previous meeting with</p> <p>5 Dr. Dydek, did it relate to this litigation?</p> <p>6 A. No.</p> <p>7 Q. Did it relate to expert witness</p> <p>8 work that you were doing?</p> <p>9 A. No.</p> <p>10 Q. Do you know what the</p> <p>11 relationship is, if any, between Dr. Thompson</p> <p>12 and Dr. Dydek?</p> <p>13 A. I don't know of any</p> <p>14 relationship outside of his work as an expert</p> <p>15 witness in related litigation.</p> <p>16 Q. Dr. Crowley, do you know</p> <p>17 Michael Crowley?</p> <p>18 A. I know of Dr. Crowley.</p> <p>19 Q. Did you know of Dr. Crowley</p> <p>20 before you were retained in the talcum powder</p> <p>21 litigation?</p> <p>22 A. No.</p> <p>23 Q. Have you ever met with</p> <p>24 Dr. Crowley?</p>
<p style="text-align: right;">Page 47</p> <p>1 this matter that you've had communications</p> <p>2 with other than what you have told us?</p> <p>3 A. No.</p> <p>4 Q. Do you have any social</p> <p>5 relationship with any of the plaintiffs'</p> <p>6 counsel?</p> <p>7 A. No.</p> <p>8 Q. Your relationship with</p> <p>9 Dr. Thompson is just the three meetings that</p> <p>10 you have been involved in with her?</p> <p>11 A. Well, we've exchanged e-mail</p> <p>12 communications, but other than that, no.</p> <p>13 Q. Have you met with or talked</p> <p>14 with any other expert witness for plaintiffs?</p> <p>15 A. No, I have not.</p> <p>16 Q. Do you know who Thomas Dydek</p> <p>17 is?</p> <p>18 A. Yes.</p> <p>19 Q. Who is Thomas Dydek?</p> <p>20 A. He is a toxicologist.</p> <p>21 Q. Where does he practice?</p> <p>22 A. I don't recall.</p> <p>23 Q. Have you had any discussions</p> <p>24 with Dr. Dydek?</p>	<p style="text-align: right;">Page 49</p> <p>1 A. I have not.</p> <p>2 Q. Ever talked with Dr. Crowley?</p> <p>3 A. I have not.</p> <p>4 Q. You reviewed his report as part</p> <p>5 of your review in this matter; is that right?</p> <p>6 A. That's correct.</p> <p>7 Q. Do you know who any of the</p> <p>8 other experts are in this litigation for</p> <p>9 plaintiffs?</p> <p>10 A. Well, I know there are a number</p> <p>11 of people who have generated reports that I</p> <p>12 have also reviewed.</p> <p>13 Q. What reports have you reviewed</p> <p>14 from plaintiffs' other experts?</p> <p>15 A. Well, I've reviewed several</p> <p>16 reports from Dr. Longo, who's done work on</p> <p>17 the presence of asbestos in talc products and</p> <p>18 related things. I think he's the only other</p> <p>19 expert that I'm aware of at this point.</p> <p>20 Q. Well, you're aware of</p> <p>21 Dr. Crowley?</p> <p>22 A. Well, Dr. Crowley, Dr. Longo,</p> <p>23 and Dr. Dydek that you mentioned before.</p> <p>24 Q. Have you reviewed any reports</p>



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<p>1 or transcripts from Dr. Dydek?</p> <p>2 A. Yes, I reviewed an expert</p> <p>3 report that he provided before I got involved</p> <p>4 in this case.</p> <p>5 Q. Did you review that report</p> <p>6 before you prepared your report?</p> <p>7 A. Yes.</p> <p>8 Q. Did you review Dr. Crowley's</p> <p>9 report before you prepared your report?</p> <p>10 A. Yes.</p> <p>11 Q. And you reviewed Dr. Longo's</p> <p>12 report before you prepared your report; is</p> <p>13 that right?</p> <p>14 A. I've reviewed one report.</p> <p>15 There was another one that became available</p> <p>16 after.</p> <p>17 Q. The second report is what you</p> <p>18 brought here with you today and we marked as</p> <p>19 Exhibit 5; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. Any other plaintiff experts</p> <p>22 that you're aware of?</p> <p>23 A. Not that I can think of, no.</p> <p>24 Q. Any other reports from</p>	<p>1 that you're aware of?</p> <p>2 A. No.</p> <p>3 Q. Are you aware of any of the</p> <p>4 experts for defendants in the talcum powder</p> <p>5 litigation?</p> <p>6 A. No.</p> <p>7 Q. Have you reviewed any reports</p> <p>8 from any of the experts in the talcum powder</p> <p>9 litigation?</p> <p>10 A. I have not.</p> <p>11 Q. Have you reviewed any of the</p> <p>12 transcripts of defense experts in the talcum</p> <p>13 powder litigation?</p> <p>14 A. I've reviewed some deposition</p> <p>15 transcripts of various witnesses.</p> <p>16 Q. Those witnesses are all listed</p> <p>17 in either your references or your literature;</p> <p>18 is that right?</p> <p>19 A. Yes.</p> <p>20 Q. Did you review the entire</p> <p>21 transcripts of the witnesses that you've</p> <p>22 identified?</p> <p>23 A. I think for the most part I</p> <p>24 would say yes.</p>
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<p>1 plaintiffs' experts that you have reviewed?</p> <p>2 A. Well, there's a -- there is an</p> <p>3 article that's been submitted for publication</p> <p>4 which I consider a piece of the scientific</p> <p>5 literature. You mentioned Dr. Saed earlier,</p> <p>6 and I know that he has a relationship with</p> <p>7 this case as well.</p> <p>8 Q. What is his relationship with</p> <p>9 this case, Dr. Saed?</p> <p>10 A. He's provided some work at the</p> <p>11 request of the attorneys here.</p> <p>12 Q. Have you reviewed that work?</p> <p>13 A. That's the subject of several</p> <p>14 articles he's published previously, he and</p> <p>15 his colleagues, as well as the additional one</p> <p>16 that I brought today.</p> <p>17 Q. Other than the articles that</p> <p>18 you have listed on your reference and</p> <p>19 literature list and the Saed article that you</p> <p>20 brought with you today, are you aware of any</p> <p>21 other work that Dr. Saed has done in this</p> <p>22 matter?</p> <p>23 A. No.</p> <p>24 Q. Any other plaintiff experts</p>	<p>1 Q. Did you review the exhibits to</p> <p>2 those depositions?</p> <p>3 A. Yes. If they were provided to</p> <p>4 me, I did, yes.</p> <p>5 Q. Did you believe that it was</p> <p>6 your job to do an independent assessment as</p> <p>7 to whether or not the habitual use of talcum</p> <p>8 powder causes or can cause ovarian cancer?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. Could you repeat the question,</p> <p>12 please.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Sure.</p> <p>15 Plaintiffs asked you to --</p> <p>16 strike that.</p> <p>17 Plaintiffs' counsel asked you</p> <p>18 to answer that question; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. You understood that they were</p> <p>21 looking to develop an association or a causal</p> <p>22 relationship between the habitual use of</p> <p>23 talcum powder and ovarian cancer, correct?</p> <p>24 A. Yes.</p>



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<p>1 MS. O'DELL: Object to the 2 form. 3 Excuse me, I'm sorry, 4 gentlemen. Give me just one second to 5 object if I need to. 6 THE WITNESS: Sure. 7 MS. O'DELL: Thank you. 8 BY MR. ZELLERS: 9 Q. Did you consider the literature 10 and the sources that refuted that association 11 or causal relationship? 12 A. I tried to consider all the 13 available literature. 14 Q. When you wrote your report 15 setting forth your opinions, did you set 16 forth the sources that refuted the 17 propositions you were making? 18 A. I cited several sources that on 19 the surface might seem to refute my opinions. 20 Q. And you believe that is 21 contained in your report which we marked as 22 Exhibit 2; is that right? 23 A. Yes. 24 Q. Have you been involved in any</p>	<p>1 A. Probably 5%. 2 Q. What percent of your income 3 comes from the work that you do as a 4 consultant? 5 A. Of course it varies quite a bit 6 from moment to moment, but it would be less 7 than 10%. 8 Q. Have you ever testified at 9 trial? 10 A. Yes. 11 Q. On how many occasions? 12 A. Probably ten. 13 Q. The 30 to 35 depositions that 14 you've given previously, those have been in 15 the context of you providing litigation 16 consulting services; is that right? 17 A. In terms of expert testimony, 18 yes. 19 Q. The trial appearances that 20 you've made, are those also in your capacity 21 as an expert witness? 22 A. Yes. 23 Q. Have you been involved in other 24 litigations?</p>
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<p>1 other talcum powder litigation other than 2 this talc MDL matter that Mr. Abney talked to 3 you about? 4 A. No, I haven't. 5 Q. In the 30 to 35 occasions that 6 you've testified in the past, have any of 7 those been on issues relating to talcum 8 powder and any association between talcum 9 powder and ovarian cancer? 10 A. No. 11 Q. You are not an expert in 12 asbestos, correct? 13 MS. O'DELL: Object to the 14 form. 15 A. I'm an occupational medicine 16 physician, and I have a significant amount of 17 awareness and training regarding asbestos as 18 it relates to occupational exposures and 19 general environmental exposures, but I don't 20 consider myself an asbestos expert. 21 BY MR. ZELLERS: 22 Q. What percentage of your time do 23 you spend working as a consultant? And I'm 24 talking about your professional time.</p>	<p>1 A. Yes. 2 Q. What other litigations have you 3 been involved in as an expert? 4 A. Well, I've been asked to 5 provide opinions and testify in a number of 6 cases, most of which involved personal injury 7 in the occupational setting or environmental 8 exposures. 9 Q. Has the majority of your expert 10 work in the occupational setting and for 11 environmental exposures been on behalf of 12 plaintiffs? 13 A. No, it's been split about 14 50/50, plaintiff and defense. 15 Q. Have you ever been retained in 16 a case involving cosmetic products? 17 A. No. 18 Q. Your curriculum vitae that we 19 marked as Exhibit 3, is it correct and up to 20 date? 21 A. It was up to date at the time 22 of submission of my report in the end of 23 2018. 24 Q. What additions need to be made</p>

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<p style="text-align: right;">Page 58</p> <p>1 or corrections need to be made to your CV, 2 Exhibit 3, to bring it up to date? 3 A. Well, I've terminated a 4 relationship with the University of Texas 5 Medical Branch in Galveston where I was 6 their -- the medical director of their 7 Employee Health Services Clinic. I continue 8 to be -- serve as an assistant clinical 9 professor of preventive medicine and family 10 medicine at that institution. 11 I have terminated my 12 relationship with the Enbridge Corporation as 13 their medical director. 14 The Spectra Energy entry, which 15 is about the seventh on the list of 16 professional activities, is also terminated 17 as that was a company that was merged and 18 became Enbridge. 19 Q. Any other corrections or 20 updates to your curriculum vitae that we've 21 marked as Exhibit 3? 22 A. No. 23 Q. Why are you no longer serving 24 as medical director, Employee Health Services</p>	<p style="text-align: right;">Page 60</p> <p>1 is that right? 2 A. Yes. 3 Q. What percentage of your time is 4 spent in the clinical practice of medicine? 5 A. Currently I see patients 6 one-half day a week and work as a supervisor 7 of the occupational medicine residents for 8 additional time during the week, so clinical 9 activities would be about probably 12 hours a 10 week. 11 Q. Do you see or treat women for 12 gynecologic cancer? 13 A. I do not. 14 Q. You have never worked for a 15 company that manufactures cosmetic products, 16 correct? 17 A. That's correct. 18 Q. You're not a gynecologist or an 19 oncologist, correct? 20 A. That's correct. 21 Q. You're not a cancer biologist? 22 MS. O'DELL: Object to the 23 form. 24 A. That's correct.</p>
<p style="text-align: right;">Page 59</p> <p>1 with the University of Texas? 2 MS. O'DELL: Objection to form. 3 A. That was a contract that I had 4 through the University of Texas Houston 5 College of Nursing that provided those 6 services to UTMB, and UTMB decided to make a 7 change and go with another contractor. 8 BY MR. ZELLERS: 9 Q. Why are you no longer serving 10 as medical director for Spectra Energy 11 Corporation and Enbridge Corporation? 12 A. Well, Spectra Energy no longer 13 exists; it became Enbridge Corporation. And 14 in October of 2018, I determined that I did 15 not -- I no longer had sufficient time to 16 provide that service. 17 Q. Your undergraduate degree was 18 in biologic sciences with a concentration in 19 engineering; is that right? 20 A. Yes. 21 Q. You received a Ph.D. in 22 toxicology; is that right? 23 A. Yes. 24 Q. And then later an M.D. degree;</p>	<p style="text-align: right;">Page 61</p> <p>1 BY MR. ZELLERS: 2 Q. You are not a geologist, 3 mineralogist or microscopist? 4 A. That's correct. 5 Q. You're not an epidemiologist? 6 A. Well, I may be considered an 7 epidemiologist simply by my appointment as an 8 associate professor in the Department of 9 Epidemiology at the School of Public Health 10 here in Houston. 11 Q. Do you have any professional 12 education in the field -- well, strike that. 13 Have you ever published or 14 conducted a meta-analysis? 15 A. I have conducted meta-analyses. 16 I've not published them. 17 Q. You did not do any type of 18 fellowship in epidemiology, correct? 19 A. That's correct. 20 Q. You're not board certified in 21 epidemiology; is that right? 22 A. I don't believe there is a 23 board certification in epidemiology. 24 Q. You're not a biostatistician or</p>

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<p style="text-align: right;">Page 62</p> <p>1 a pulmonologist?</p> <p>2 A. That's correct.</p> <p>3 Q. You're not a material</p> <p>4 scientist?</p> <p>5 A. That's correct.</p> <p>6 Q. Nor are you a pathologist?</p> <p>7 A. Correct.</p> <p>8 Q. You've never been involved in</p> <p>9 any pathological exam or research relating to</p> <p>10 ovarian cancer; is that right?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. I'm not sure exactly what you</p> <p>14 mean by your question.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Sure. Let me withdraw that.</p> <p>17 You've never been involved in</p> <p>18 terms of the research relating to ovarian</p> <p>19 cancer, correct?</p> <p>20 A. Not specifically, no.</p> <p>21 Q. You've never authored any</p> <p>22 literature or publications relating to talcum</p> <p>23 powder?</p> <p>24 A. No.</p>	<p style="text-align: right;">Page 64</p> <p>1 A. I think I had opinions about</p> <p>2 talcum powder and its constituents, but if</p> <p>3 you could be more specific, I might be able</p> <p>4 to give you a more specific answer.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Did you ever, before getting</p> <p>7 involved in this litigation in October of</p> <p>8 2018, do research -- strike that.</p> <p>9 You've never published on</p> <p>10 talcum powder, correct?</p> <p>11 A. That's correct.</p> <p>12 Q. You have never published on the</p> <p>13 constituent components of talcum powder,</p> <p>14 correct?</p> <p>15 A. That may not be the case. I've</p> <p>16 done work in some other minerals which have</p> <p>17 resulted in publications, for example,</p> <p>18 vermiculite, which have touched on the issues</p> <p>19 of asbestos, association with talc,</p> <p>20 association with other minerals, but never</p> <p>21 specifically regarding talc.</p> <p>22 Q. Are those publications on your</p> <p>23 CV?</p> <p>24 A. They are.</p>
<p style="text-align: right;">Page 63</p> <p>1 Q. Or relating to ovarian cancer,</p> <p>2 correct?</p> <p>3 A. No.</p> <p>4 Q. Okay. What journals -- well,</p> <p>5 strike that.</p> <p>6 You have never published on</p> <p>7 fragrance chemicals; is that right?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. That's correct.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Never done any research on</p> <p>13 fragrance chemicals, correct?</p> <p>14 A. I've done some work with</p> <p>15 fragrance chemicals and health effects that</p> <p>16 are associated with them, but I have not -- I</p> <p>17 would not classify that as research or</p> <p>18 publication.</p> <p>19 Q. You had no opinions regarding</p> <p>20 talcum powder or any of its constituent</p> <p>21 components before getting involved in this</p> <p>22 litigation; is that right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p style="text-align: right;">Page 65</p> <p>1 Q. That we marked as Exhibit 3?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. Have you ever</p> <p>4 communicated with the FDA regarding talcum</p> <p>5 powder?</p> <p>6 A. I've not.</p> <p>7 Q. Have you ever communicated with</p> <p>8 Health Canada regarding talcum powder?</p> <p>9 A. No.</p> <p>10 Q. When did you first start</p> <p>11 preparing your report which we've marked as</p> <p>12 Exhibit 2?</p> <p>13 A. Well, I began a literature</p> <p>14 review immediately after talking to</p> <p>15 Mr. Abney.</p> <p>16 Q. My question, I guess, is: When</p> <p>17 did you start writing your report?</p> <p>18 A. Well, technically I started</p> <p>19 writing my report after I was retained by</p> <p>20 plaintiffs' counsel.</p> <p>21 Q. Late October, early</p> <p>22 November 2018?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form, misstates his prior testimony.</p>

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<p>1 A. In October of 2018.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Have you reviewed any of the</p> <p>4 deposition transcripts of any of the experts</p> <p>5 that have been deposed in this litigation?</p> <p>6 A. Yes.</p> <p>7 Q. What deposition transcripts of</p> <p>8 experts have you reviewed?</p> <p>9 A. Oh, of experts? No, I have not</p> <p>10 reviewed -- well, I've reviewed -- I've</p> <p>11 reviewed expert depositions, but I don't know</p> <p>12 what case they were deposed in, but it</p> <p>13 relates to talcum powder and ovarian cancer</p> <p>14 issue.</p> <p>15 Q. What expert depositions have</p> <p>16 you reviewed?</p> <p>17 A. They're all cited in the</p> <p>18 literature exhibit.</p> <p>19 Q. All of the deposition</p> <p>20 transcripts that you've reviewed are cited in</p> <p>21 Exhibit 4?</p> <p>22 A. I think any of the transcripts</p> <p>23 that I review are -- reviewed are probably</p> <p>24 included in here.</p>	<p>1 and bolts of what goes on legally in this</p> <p>2 case. I know there are multiple lawsuits,</p> <p>3 and I'm not sure which ones those -- these</p> <p>4 are pertinent to.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. My question is a little</p> <p>7 different and I hope pretty simple: In</p> <p>8 addition to the depositions, transcripts and</p> <p>9 reports that you have listed on pages 27 and</p> <p>10 28 of Exhibit 4, your literature list, are</p> <p>11 there any additional depositions or</p> <p>12 transcripts that you've reviewed?</p> <p>13 A. Pardon me for a moment while I</p> <p>14 review this.</p> <p>15 (Document review.)</p> <p>16 A. No, I'm not aware that there</p> <p>17 are.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Your testimony earlier was that</p> <p>20 you have reviewed each of those depositions</p> <p>21 in their entirety; is that right?</p> <p>22 A. Yes.</p> <p>23 Q. You have also reviewed the</p> <p>24 exhibits to those depositions; is that right?</p>
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<p>1 Q. Are you aware of reviewing any</p> <p>2 transcripts that you did not include in your</p> <p>3 literature statement?</p> <p>4 A. I'm not aware, but I can't tell</p> <p>5 you as I'm sitting here right now whether all</p> <p>6 of those are included in this literature</p> <p>7 statement or not.</p> <p>8 Q. You -- looking at page --</p> <p>9 MS. O'DELL: I'm sorry. Go</p> <p>10 ahead.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Are there any that you believe</p> <p>13 you have reviewed that are not included in</p> <p>14 the literature statement?</p> <p>15 A. Well, let me just see here.</p> <p>16 There are --</p> <p>17 MS. O'DELL: I think they're at</p> <p>18 the end, Dr. Carson.</p> <p>19 THE WITNESS: At the very end.</p> <p>20 A. Beginning on page 27 is a list</p> <p>21 of the depositions, transcripts and reports</p> <p>22 that I've reviewed, which include some of the</p> <p>23 expert witnesses, but again, I would have to</p> <p>24 say I'm -- I'm sort of unaware of the nuts</p>	<p>1 A. If they were made available to</p> <p>2 me, I've looked at all those exhibits as</p> <p>3 well.</p> <p>4 Q. On page 27 of Exhibit 4, who is</p> <p>5 Annie Yessaian?</p> <p>6 A. On page 24?</p> <p>7 Q. Strike that. I'm sorry. On</p> <p>8 page 27 of Exhibit 4 --</p> <p>9 A. I see.</p> <p>10 Q. -- at the bottom, who is Annie</p> <p>11 Yessaian?</p> <p>12 A. I don't recall.</p> <p>13 Q. You reviewed her entire</p> <p>14 transcript and you don't recall who she is?</p> <p>15 A. I don't.</p> <p>16 Q. Well, go to the next page. Who</p> <p>17 is Pat Downey?</p> <p>18 A. I believe Pat Downey is an</p> <p>19 operative of the Imerys company.</p> <p>20 Q. Do you know what Mr. Downey's</p> <p>21 position is?</p> <p>22 A. It's a supervisory position</p> <p>23 regarding -- regarding quality of the talc</p> <p>24 product.</p>

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<p>1 Q. Who is John Hopkins?</p> <p>2 A. John Hopkins is an official, I</p> <p>3 believe, of -- I'm not sure -- of Johnson &amp;</p> <p>4 Johnson, I believe, who has some oversight of</p> <p>5 talc quality as well.</p> <p>6 Q. Susan Nicholson, who is she?</p> <p>7 A. I don't recall.</p> <p>8 Q. Who is Julie Pier?</p> <p>9 A. Julie Pier is another scientist</p> <p>10 who works for Imerys, who is responsible for</p> <p>11 testing and quality.</p> <p>12 Q. In your clinical and academic</p> <p>13 practice, do you typically rely upon</p> <p>14 depositions of company witnesses or experts?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. If there's pertinent</p> <p>18 information in there that leads me to other</p> <p>19 areas or helps me formulate my opinions, then</p> <p>20 yes.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. In the papers and publications</p> <p>23 that you have identified in your curriculum</p> <p>24 vitae, Exhibit 3, do you ever recall citing</p>	<p>1 BY MR. ZELLERS:</p> <p>2 Q. Once you looked at these</p> <p>3 documents, the Imerys documents and the</p> <p>4 documents produced by the Johnson &amp; Johnson</p> <p>5 companies, did you ask plaintiffs' counsel</p> <p>6 for any additional documents?</p> <p>7 A. I did not. My understanding is</p> <p>8 that most of these are reports, testing</p> <p>9 reports, and most of them are positive</p> <p>10 results regarding the presence of asbestos or</p> <p>11 fibers in the product. And I know that there</p> <p>12 were many others that may not have shown</p> <p>13 positive results that I did not look at.</p> <p>14 Q. Did you ask the plaintiff</p> <p>15 attorneys to show you or provide you with the</p> <p>16 testing documentation that showed an absence</p> <p>17 of asbestos or asbestos fibers in the talcum</p> <p>18 powder?</p> <p>19 A. Regarding the test results that</p> <p>20 are equivalent to these that were negative,</p> <p>21 no, I did not request those.</p> <p>22 Q. Did you review documents</p> <p>23 relating to any fragrance chemicals that are</p> <p>24 contained in or that you believe are</p>
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<p>1 to company witness deposition testimony?</p> <p>2 A. I don't typically cite</p> <p>3 deposition testimonies in published papers.</p> <p>4 Q. You cite to various company</p> <p>5 documents. This is on pages 29 to 30 of</p> <p>6 Exhibit 4, your list of literature; is that</p> <p>7 right?</p> <p>8 A. Yes.</p> <p>9 Q. Did you rely on these documents</p> <p>10 in formulating your opinions?</p> <p>11 A. Yes.</p> <p>12 Q. Were these documents selected</p> <p>13 for you by plaintiffs' counsel?</p> <p>14 A. Yes, they were.</p> <p>15 Q. Are you able to identify what</p> <p>16 each of the documents are?</p> <p>17 MS. O'DELL: Based on the Bates</p> <p>18 number?</p> <p>19 MR. ZELLERS: Based on the</p> <p>20 Bates numbers.</p> <p>21 A. No, I am not. I would have to</p> <p>22 look at each individual document to refresh</p> <p>23 my memory as to what it contains.</p> <p>24 ///</p>	<p>1 contained in the talcum powder?</p> <p>2 A. Yes. I did review some lists</p> <p>3 and, of course, Dr. Crowley's report.</p> <p>4 Q. Do you have any idea or</p> <p>5 understanding as to the amount or amounts of</p> <p>6 the fragrance chemicals that are contained in</p> <p>7 the talcum powder in either the Johnson &amp;</p> <p>8 Johnson Consumer company talcum powder that's</p> <p>9 involved in this litigation?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 MR. ZELLERS: Let me withdraw</p> <p>13 that.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Do you know or have any</p> <p>16 understanding as to the amounts of fragrance</p> <p>17 chemicals that are in the talcum powder?</p> <p>18 A. I do not have the specific</p> <p>19 formulation or quantities of those substances</p> <p>20 that contributed to the products.</p> <p>21 Q. Do --</p> <p>22 MS. O'DELL: Excuse me.</p> <p>23 MR. ZELLERS: Ms. O'Dell,</p> <p>24 please, I'm going to let the doctor</p>

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<p>1 finish.</p> <p>2 MS. O'DELL: In that instance,</p> <p>3 I don't know that he was, and so if he</p> <p>4 was, my apologies.</p> <p>5 MR. ZELLERS: It's okay.</p> <p>6 MS. O'DELL: I've been on my</p> <p>7 best behavior today, as you know,</p> <p>8 so -- but I don't want the witness to</p> <p>9 feel as if they're being cut off, and</p> <p>10 because Dr. Carson is a very polite</p> <p>11 gentlemen, he would let you interrupt</p> <p>12 him.</p> <p>13 MR. ZELLERS: Of course.</p> <p>14 MS. O'DELL: And I don't think</p> <p>15 that's fair.</p> <p>16 So, Dr. Carson, if you're</p> <p>17 finished, great. If you're not, you</p> <p>18 may continue.</p> <p>19 A. Well, I was going to say that</p> <p>20 my opinion is that there are very small</p> <p>21 quantities of those substances that</p> <p>22 contribute to the fragrance component.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Do you know how those</p>	<p>1 understanding of business practices and these</p> <p>2 types of industries, I've reviewed an</p> <p>3 extremely small percentage of those.</p> <p>4 Q. Is it your practice in your</p> <p>5 academic work or your clinical research work</p> <p>6 to rely on internal company documents?</p> <p>7 A. Yes, it is.</p> <p>8 Q. Do you rely on internal company</p> <p>9 documents when you publish papers?</p> <p>10 A. In some cases.</p> <p>11 Q. Can you tell me in what cases</p> <p>12 or instances you have relied on internal</p> <p>13 company documents in your publications?</p> <p>14 A. Well, for example, I did -- I</p> <p>15 was involved in some research work in</p> <p>16 conjunction with NIOSH at the O.M. Scott</p> <p>17 Company at Marysville, Ohio, where we did</p> <p>18 a -- we performed a research in the company</p> <p>19 and relied on some internal documents in</p> <p>20 terms of gauging concentrations, industrial</p> <p>21 hygiene records and so forth, in order to</p> <p>22 draw conclusions that were pertinent to those</p> <p>23 publications.</p> <p>24 Q. Was that data or were those</p>
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<p>1 quantities of fragrance chemicals may have</p> <p>2 changed over the years?</p> <p>3 A. My understanding is they have</p> <p>4 not changed dramatically, but there have been</p> <p>5 certain substitutions over time.</p> <p>6 Q. Do you agree that to the extent</p> <p>7 that you have reviewed internal documents,</p> <p>8 either of Imerys or from Johnson &amp; Johnson</p> <p>9 companies, that you have only reviewed the</p> <p>10 documents that were hand-selected by the</p> <p>11 plaintiff lawyers for you to review?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I agree that the only documents</p> <p>15 that I've reviewed regarding the internal</p> <p>16 products of Johnson &amp; Johnson or Imerys are</p> <p>17 the ones that were provided by the</p> <p>18 plaintiffs' attorneys.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Do you know what percentage of</p> <p>21 the documents that have been produced in this</p> <p>22 litigation by the Johnson &amp; Johnson companies</p> <p>23 and by Imerys you have reviewed?</p> <p>24 A. Well, based on my general</p>	<p>1 internal communications that you relied on?</p> <p>2 A. They were both.</p> <p>3 Q. What is the publication on your</p> <p>4 CV where you relied on those materials?</p> <p>5 A. Well, let me see here. I think</p> <p>6 the first author -- looking back here -- the</p> <p>7 first author would be Jim Lockey.</p> <p>8 Q. Looking at page 6?</p> <p>9 A. It's on page 6, and the --</p> <p>10 there are two publications there. One is</p> <p>11 Pulmonary Changes After Exposure to</p> <p>12 Vermiculite Contaminated With Fibrous</p> <p>13 Tremolite that appeared in the American</p> <p>14 Review of Respiratory Disease in 1984.</p> <p>15 There's another publication</p> <p>16 which is a book chapter called Pulmonary</p> <p>17 Hazards From Vermiculite that appeared in a</p> <p>18 book titled Health Issues Related to Metal</p> <p>19 and Nonmetallic Mining.</p> <p>20 Q. Do you agree that when you have</p> <p>21 been provided only a small subset of the</p> <p>22 documents of a company relating to a</p> <p>23 particular product, that those documents can</p> <p>24 potentially be misleading?</p>

20 (Pages 74 to 77)



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<p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I don't agree that that's the</p> <p>4 case because I am capable of understanding</p> <p>5 that it's a subset of available information,</p> <p>6 and I can make a reliable determination on</p> <p>7 the pertinence of that material regardless.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Without looking at any other</p> <p>10 documents or any documents that may put the</p> <p>11 documents you were provided in context?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. It depends on the specific</p> <p>15 case, but I would say in most cases, yes.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. In this case, it was not</p> <p>18 necessary for you to look at any documents</p> <p>19 other than those specific documents the</p> <p>20 plaintiffs provided to you; is that your</p> <p>21 testimony?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. Regarding the contribution to</p>	<p>1 department?</p> <p>2 A. She's in my department, yes.</p> <p>3 Q. You understand she's a</p> <p>4 lawyer -- strike that.</p> <p>5 You understand she's an expert</p> <p>6 for the plaintiffs in this litigation?</p> <p>7 A. I didn't know that.</p> <p>8 Q. Dr. Ness never told you that</p> <p>9 she was an expert witness for plaintiffs in</p> <p>10 this matter?</p> <p>11 A. No, we didn't discuss this</p> <p>12 case. We only discussed the issue.</p> <p>13 Q. Any other colleagues that you</p> <p>14 discussed your report and opinions with?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. I think I shared some of my</p> <p>18 thinking with the occupational medicine</p> <p>19 residents as a group and asked them to</p> <p>20 consider certain issues in the case.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Did they contribute to your</p> <p>23 review and analysis and opinions?</p> <p>24 A. We had an interesting</p>
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<p>1 my opinions, I would say, yes, it was not</p> <p>2 necessary.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Did you do any independent</p> <p>5 investigation to reach your opinions, other</p> <p>6 than the literature search and review of</p> <p>7 websites that you told us about earlier?</p> <p>8 A. Other than just general</p> <p>9 discussion with colleagues, no.</p> <p>10 Q. Did any of the colleagues that</p> <p>11 you spoke with provide you with any</p> <p>12 substantive support for your opinions?</p> <p>13 A. Not that I can recall. It was</p> <p>14 mostly just helpful feedback.</p> <p>15 Q. The colleagues that you spoke</p> <p>16 with were who?</p> <p>17 A. Various colleagues in my</p> <p>18 department or in the School of Public Health.</p> <p>19 Q. Who?</p> <p>20 A. Well, Dr. George Delclos, who</p> <p>21 is a pulmonologist; Dr. Brett Perkison, who</p> <p>22 is an occupational medicine physician;</p> <p>23 Roberta Ness, who is an epidemiologist.</p> <p>24 Q. Roberta Ness is in your</p>	<p>1 discussion, but I don't think that changed my</p> <p>2 opinions in any way.</p> <p>3 Q. The opinions that you're</p> <p>4 expressing in this case are your opinions; is</p> <p>5 that right?</p> <p>6 A. That's correct.</p> <p>7 Q. Your opinions you set forth in</p> <p>8 your report beginning on page 7; is that</p> <p>9 right?</p> <p>10 A. Let me refer to my report, if</p> <p>11 you don't mind.</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I would say -- I would say in</p> <p>15 answer to that question that, yes, my</p> <p>16 opinions do begin on page 7 of the report.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Your first opinion set forth on</p> <p>19 page 7 is that talcum powder is immunogenic</p> <p>20 and carcinogenic; is that right?</p> <p>21 A. Yes.</p> <p>22 MS. O'DELL: Excuse me.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Your second opinion is that</p>



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<p>1 perineal use of talcum powder results in 2 direct exposure to the ovaries either via 3 inhalation or migration through the female 4 reproductive tract, correct? 5 A. I would not phrase the opinion 6 in that way, but in general, that is my 7 opinion, yes. 8 Q. How would you phrase your 9 second opinion? 10 A. I think my second opinion 11 relates mostly to the direct exposure to the 12 reproductive tract that perineal use of 13 talcum powder produces. 14 Q. Are you opining as to 15 inhalation as an exposure of talcum powder to 16 women's ovaries? 17 MS. O'DELL: Object to the 18 form. 19 A. Only as a secondary route of 20 exposure. 21 BY MR. ZELLERS: 22 Q. Is it part of your opinions or 23 do you defer to other experts on inhalation? 24 A. I would include that as my</p>	<p>1 MS. O'DELL: Object to the 2 form. 3 A. It's an anatomical fact. The 4 physiology of the reproductive system does 5 not provide the ovaries with the kind of 6 clearance system that, for example, the lungs 7 would have for inhaled exposures. 8 BY MR. ZELLERS: 9 Q. The words "no intrinsic 10 elimination system," are those your words or 11 are those words that you've seen reported in 12 another study or another paper? 13 A. I think that's a fairly generic 14 description, that those are my words. 15 Q. Your fourth opinion is that you 16 believe that the epidemiological studies on 17 talcum powder and ovarian cancer show about a 18 30% increased risk; is that right? 19 A. Correct. 20 MS. O'DELL: Object to the 21 form. 22 BY MR. ZELLERS: 23 Q. As you told us at the outset, 24 those are all still your opinions, although</p>
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<p>1 opinion. 2 Q. So you're testifying here today 3 that the perineal use of talcum powder 4 results in direct exposure to the ovaries 5 through migration through the female 6 reproductive tract and that inhalation also 7 results in exposure of talcum powder to the 8 ovaries; is that right? 9 A. That is correct, but my basic 10 opinion is that perineal use of talcum powder 11 exposes the entire reproductive tract, 12 including the pelvic cavity. So it's a bit 13 more extensive than your phrasing. 14 Q. Your third opinion is very 15 similar to your first opinion, except that 16 here you add that it's your opinion that the 17 ovaries are particularly susceptible to the 18 carcinogenicity of talcum powder because they 19 have, in your words, "no intrinsic 20 elimination system"; is that right? 21 A. That's correct. 22 Q. Is that something you came up 23 with on your own, no intrinsic elimination 24 system?</p>	<p>1 you do believe even stronger that there is a 2 causal association between talcum powder and 3 ovarian cancer; is that right? 4 A. That's correct. 5 Q. Have you published on your 6 theory that baby powder causes ovarian 7 cancer? 8 A. No. 9 Q. Do you have plans to do that? 10 A. Not presently. 11 Q. Have you conducted any tests or 12 experiments to confirm your theory that talc 13 migrates to the ovaries? 14 MS. O'DELL: Object to the 15 form. 16 A. These are conclusions that I 17 have drawn based on published literature. I 18 wouldn't characterize them as a theory. I 19 think they're pretty much established fact. 20 BY MR. ZELLERS: 21 Q. I'm going to ask you about all 22 these opinions, and so we'll go through the 23 literature and determine -- or at least I'll 24 ask you questions about why you think that</p>

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<p style="text-align: right;">Page 86</p> <p>1 some of these matters are established fact.</p> <p>2 My question is: Did you do any</p> <p>3 tests or experiments as part of your review</p> <p>4 and analysis in this matter?</p> <p>5 A. I did not.</p> <p>6 Q. Did you do any tests or</p> <p>7 experiments relating to your opinion that</p> <p>8 talc causes cancer via inflammation?</p> <p>9 A. I did not.</p> <p>10 Q. Can you identify any article</p> <p>11 that identifies inflammation anywhere in a</p> <p>12 woman's reproductive tract that results from</p> <p>13 external genital talc application?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I think there are a number of</p> <p>17 published articles that allude to that</p> <p>18 relationship and draw a fairly strong</p> <p>19 conclusion that it exists.</p> <p>20 MS. O'DELL: Mike, excuse me,</p> <p>21 and I'm sorry to interrupt. We've</p> <p>22 been going over an hour and a half.</p> <p>23 Are you at a point where we can take</p> <p>24 just a short break for...</p>	<p style="text-align: right;">Page 88</p> <p>1 you aware of any article that identifies</p> <p>2 inflammation in a woman's reproductive tract</p> <p>3 resulting from external genital talc</p> <p>4 application?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. I would say that the studies</p> <p>8 which have looked at that have relied on the</p> <p>9 result of internal application to show</p> <p>10 migration. There have been studies that have</p> <p>11 shown inflammation as the result of talc, and</p> <p>12 in my opinion, external application is the</p> <p>13 same as internal application in the</p> <p>14 reproductive tract.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. I don't mean to be</p> <p>17 argumentative, and I don't want to be, but</p> <p>18 can you name me an article that identifies</p> <p>19 inflammation in a woman's reproductive tract</p> <p>20 resulting from external genital talc</p> <p>21 application?</p> <p>22 MS. O'DELL: Objection, asked</p> <p>23 and answered.</p> <p>24 A. I can't specifically.</p>
<p style="text-align: right;">Page 87</p> <p>1 MR. ZELLERS: Sure, we can.</p> <p>2 Let me just ask these couple of</p> <p>3 questions, and then we'll take a</p> <p>4 break.</p> <p>5 MS. O'DELL: Sure.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. So please identify for me any</p> <p>8 articles that you have reviewed that identify</p> <p>9 inflammation anywhere in a woman's</p> <p>10 reproductive tract resulting from external</p> <p>11 genital talc application.</p> <p>12 MS. O'DELL: Objection to form.</p> <p>13 A. I think -- I think the research</p> <p>14 evidence that includes the epidemiology</p> <p>15 piece, which is limited to external</p> <p>16 application of talcum powder, has significant</p> <p>17 enough correspondence with the biological</p> <p>18 experimentation literature that it allows us</p> <p>19 to draw those conclusions.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. I understand you've drawn some</p> <p>22 conclusions here, and I'm going to ask you</p> <p>23 about these conclusions.</p> <p>24 But what my question is: Are</p>	<p style="text-align: right;">Page 89</p> <p>1 MR. ZELLERS: Let's take a</p> <p>2 break.</p> <p>3 THE VIDEOGRAPHER: We're off</p> <p>4 the record, 10:37, end of Tape 1.</p> <p>5 (Recess taken, 10:37 a.m. to</p> <p>6 10:55 a.m.)</p> <p>7 THE VIDEOGRAPHER: We're on the</p> <p>8 record at 10:55, beginning of Tape 2.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Dr. Carson, two of the things</p> <p>11 that you have reviewed since authoring your</p> <p>12 report in November of 2018 that you believe</p> <p>13 support your conclusions in this matter and</p> <p>14 your opinions in this matter are the draft</p> <p>15 screening assessment from Health Canada,</p> <p>16 which we marked as Exhibit 9, and the Taher</p> <p>17 paper, which has been marked as Exhibit 7; is</p> <p>18 that right?</p> <p>19 A. Yes.</p> <p>20 Q. Have you looked into what other</p> <p>21 public health authorities, other than</p> <p>22 Health Canada, have had to say about talc and</p> <p>23 ovarian cancer?</p> <p>24 A. Yes, I have.</p>

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<p>1 Q. Did you -- strike that.</p> <p>2 Are you familiar with the</p> <p>3 Center for Disease Control in the United</p> <p>4 States?</p> <p>5 A. Yes.</p> <p>6 Q. Did you review the CDC and its</p> <p>7 position on any relationship between talcum</p> <p>8 powder and ovarian cancer?</p> <p>9 A. That may have been part of my</p> <p>10 review, but I don't specifically recall now</p> <p>11 what the CDC has on that issue.</p> <p>12 Q. CDC does not list talc or</p> <p>13 talcum powder as a risk factor for ovarian</p> <p>14 cancer, correct?</p> <p>15 A. It's quite possible.</p> <p>16 Q. Mayo Clinic and a number of</p> <p>17 medical centers do not list talc as a risk</p> <p>18 factor for ovarian cancer, correct?</p> <p>19 A. That may be true.</p> <p>20 Q. Did you consider, or are you</p> <p>21 familiar with the National Cancer Institute?</p> <p>22 A. I am.</p> <p>23 Q. National Cancer Institute is a</p> <p>24 leading health authority in the United</p>	<p>1 MR. ZELLERS: I'm asking the</p> <p>2 doctor a question.</p> <p>3 MS. O'DELL: Okay.</p> <p>4 MR. ZELLERS: So --</p> <p>5 MS. O'DELL: That's specific</p> <p>6 language, and if you have specific</p> <p>7 language that you're reading from the</p> <p>8 report or you've taken from the</p> <p>9 report, I would just ask that you show</p> <p>10 the doctor.</p> <p>11 MR. ZELLERS: Ms. O'Dell, I</p> <p>12 have my question. I'm asking my</p> <p>13 question. The doctor can either</p> <p>14 answer my question or not answer my</p> <p>15 question. I'm not reading from a</p> <p>16 document. I'm reading from my notes.</p> <p>17 MS. O'DELL: I object to the</p> <p>18 form of the question. I think it's</p> <p>19 unfair.</p> <p>20 MR. ZELLERS: Can you answer</p> <p>21 that question, Doctor?</p> <p>22 A. I would agree that that</p> <p>23 restates the general opinion of the NCI as</p> <p>24 published, but in order to verify the</p>
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<p>1 States; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. Particularly in the area of</p> <p>4 cancer and materials that may or may not be</p> <p>5 carcinogenic; is that right?</p> <p>6 A. Well, the National Cancer</p> <p>7 Institute is responsible for guiding national</p> <p>8 research policies as it relates to cancers,</p> <p>9 and that's one of their considerations is</p> <p>10 substances that may be related to cancer.</p> <p>11 Q. When you reviewed what the</p> <p>12 National Cancer Institute has determined with</p> <p>13 respect to talcum powder and whether or not</p> <p>14 it is a risk factor for ovarian cancer, what</p> <p>15 did you find?</p> <p>16 A. The most recent publication</p> <p>17 that I viewed discounts the relationship.</p> <p>18 Q. In fact, the National Cancer</p> <p>19 Institute has concluded that the weight of</p> <p>20 the evidence does not support an association</p> <p>21 between perineal talc exposure and increased</p> <p>22 risk of ovarian cancer; is that right?</p> <p>23 MS. O'DELL: Are you reading a</p> <p>24 quote from the document?</p>	<p>1 specific wording, I would need to look at the</p> <p>2 document.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Why would you rely on</p> <p>5 Health Canada but not these other public</p> <p>6 health organizations, including Center for</p> <p>7 Disease Control and the National Cancer</p> <p>8 Institute?</p> <p>9 A. Well, there are a number of</p> <p>10 reasons. There are lots of public health</p> <p>11 organizations. Many of them have different</p> <p>12 interests and different approaches in the way</p> <p>13 that they address problems. For example,</p> <p>14 discussing the National Cancer Institute, its</p> <p>15 primary focus is on research and treatments</p> <p>16 regarding cancers, not necessarily causes,</p> <p>17 but it is a funder of basic research in the</p> <p>18 United States.</p> <p>19 Health Canada is an</p> <p>20 organization whose charge is to -- is to</p> <p>21 synthesize public health-related positions</p> <p>22 based on evidence and disseminate those to</p> <p>23 public -- the public through various</p> <p>24 healthcare organizations or agencies. And</p>

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<p>1 for that reason, I think it's important to</p> <p>2 look at the different focus.</p> <p>3 Also, the Health Canada report</p> <p>4 is a more contemporaneous report, which has</p> <p>5 been based on more recent science than has</p> <p>6 been considered either by the NCI or some of</p> <p>7 the other public health organizations.</p> <p>8 Q. The NCI's most recent update to</p> <p>9 its publication was January of 2019; is that</p> <p>10 right?</p> <p>11 MS. O'DELL: Object to the</p> <p>12 form.</p> <p>13 A. It's current in terms of its</p> <p>14 publication. I don't know that it's January</p> <p>15 of '19; it may be. But it's still not based</p> <p>16 on the most recently available literature.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. But Health Canada is; is that</p> <p>19 right?</p> <p>20 A. Health Canada is based on more</p> <p>21 recent literature than the NCI position.</p> <p>22 Q. Health Canada and its</p> <p>23 assessment is based upon the meta-analysis by</p> <p>24 Taher that we've marked as Exhibit 7; is that</p>	<p>1 very beginning of the public comment period,</p> <p>2 correct?</p> <p>3 A. Yes.</p> <p>4 Q. You agree that Health Canada</p> <p>5 can take up to two years to either take</p> <p>6 action or no action at all; is that right?</p> <p>7 A. I don't know that to be the</p> <p>8 case, but it very well could be.</p> <p>9 Q. How did you come to learn of</p> <p>10 the Health Canada risk assessment?</p> <p>11 A. I believe the attorneys let me</p> <p>12 know about it.</p> <p>13 Q. The attorneys for plaintiffs in</p> <p>14 this matter that retained you?</p> <p>15 A. Yes.</p> <p>16 Q. Were you involved in the Health</p> <p>17 Canada risk assessment prior to its</p> <p>18 publication?</p> <p>19 A. No.</p> <p>20 Q. Have you submitted any comments</p> <p>21 to Health Canada?</p> <p>22 A. Not yet.</p> <p>23 Q. Do you intend to submit</p> <p>24 comments to Health Canada?</p>
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<p>1 right?</p> <p>2 A. It is.</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. You have reviewed that paper</p> <p>7 and you believe it supports and strengthens</p> <p>8 your opinions in this case; is that right?</p> <p>9 A. Yes.</p> <p>10 Q. Does the National Cancer</p> <p>11 Institute review the peer-reviewed literature</p> <p>12 as it relates to risk factors for ovarian</p> <p>13 cancer?</p> <p>14 A. They have a number of</p> <p>15 committees that are set up for that purpose,</p> <p>16 and it is -- it's a committee approach which</p> <p>17 is handled by a committee chairperson. The</p> <p>18 National Cancer Institute itself has some</p> <p>19 oversight of that process, but they defer to</p> <p>20 the committee chairs.</p> <p>21 Q. You understand that the Health</p> <p>22 Canada assessment is a draft; is that right?</p> <p>23 A. Yes.</p> <p>24 Q. You understand that it's at the</p>	<p>1 A. I might.</p> <p>2 Q. What comments do you intend to</p> <p>3 submit to Health Canada?</p> <p>4 A. I haven't formulated them yet.</p> <p>5 Q. Outside of litigation, do you</p> <p>6 generally rely on draft assessments by</p> <p>7 regulatory agencies?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. Yes.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Are you familiar with the</p> <p>13 precautionary principle?</p> <p>14 A. I am.</p> <p>15 Q. What is the precautionary</p> <p>16 principle?</p> <p>17 A. The precautionary principle</p> <p>18 states that changes should take place in the</p> <p>19 face of a potential hazard until that hazard</p> <p>20 is proved not to exist. It's a general</p> <p>21 precept that's used in the EU, for example,</p> <p>22 and very different from the one that operates</p> <p>23 in this country.</p> <p>24 Q. The principle in this country</p>

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<p>1 is that there needs to be scientific evidence</p> <p>2 in order to take action; is that right?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. Yes, that's correct.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. The precautionary principle</p> <p>8 says even before there's full or complete</p> <p>9 scientific demonstration of cause and effect,</p> <p>10 it is appropriate to take a precautionary</p> <p>11 approach; is that right?</p> <p>12 A. That's right.</p> <p>13 Q. The Health Canada follows --</p> <p>14 strike that.</p> <p>15 Health Canada follows and has</p> <p>16 adopted a precautionary approach; is that</p> <p>17 right?</p> <p>18 A. Yes.</p> <p>19 Q. Please review</p> <p>20 Deposition Exhibit 14.</p> <p>21 (Carson Deposition Exhibit 14</p> <p>22 marked.)</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Deposition Exhibit 14 is the</p>	<p>1 Did I read that correctly?</p> <p>2 A. You did.</p> <p>3 Q. Is that your understanding of</p> <p>4 what a precautionary approach is?</p> <p>5 A. Yes. In general, the</p> <p>6 precautionary principle can be restated that</p> <p>7 an ounce of prevention is worth a pound of</p> <p>8 cure.</p> <p>9 Q. Health Canada does not require</p> <p>10 a finding of causation such as required in</p> <p>11 litigation matters in this country, the</p> <p>12 United States; is that right?</p> <p>13 A. In order to adopt a document</p> <p>14 that has a significant effect on general</p> <p>15 public health practices, no, it does not.</p> <p>16 Q. The Taher paper, that's another</p> <p>17 paper that you have reviewed since you</p> <p>18 published your report; is that right?</p> <p>19 A. Which paper? I'm sorry.</p> <p>20 Q. This is what we've marked as</p> <p>21 Exhibit 7. You brought it with you here</p> <p>22 today?</p> <p>23 A. Okay. Yes.</p> <p>24 Q. You've read the Taher 2018</p>
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<p>1 Health Canada Decision-Making Framework for</p> <p>2 Identifying, Assessing and Managing Health</p> <p>3 Risk.</p> <p>4 Do you see that?</p> <p>5 A. Yes.</p> <p>6 Q. If you go to page 5 of</p> <p>7 Exhibit 14 --</p> <p>8 MS. O'DELL: Feel free to</p> <p>9 take -- review the document if you're</p> <p>10 not familiar with it, Dr. Carson.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. One of the underlying</p> <p>13 principles in the Health Canada</p> <p>14 decision-making framework is use a</p> <p>15 precautionary approach; is that right?</p> <p>16 A. That's right.</p> <p>17 Q. If we go to page 8, Health</p> <p>18 Canada defines the use of a precautionary</p> <p>19 approach, and looking at the second sentence:</p> <p>20 A precautionary approach to decision-making</p> <p>21 emphasizes the need to take timely and</p> <p>22 appropriate preventative action, even in the</p> <p>23 absence of a full scientific demonstration of</p> <p>24 cause and effect.</p>	<p>1 manuscript; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. Where did you obtain that</p> <p>4 manuscript from?</p> <p>5 A. This was obtained directly from</p> <p>6 one of the coauthors on this study to the</p> <p>7 plaintiffs' attorneys, who passed it along to</p> <p>8 me.</p> <p>9 Q. So one of the coauthors on this</p> <p>10 study gave it to the plaintiffs' counsel, who</p> <p>11 then gave it to you; is that right?</p> <p>12 A. That's correct.</p> <p>13 Q. Who was the author of this</p> <p>14 publication, Exhibit 7, that provided the</p> <p>15 paper to plaintiffs' counsel, if you know?</p> <p>16 A. I don't recall.</p> <p>17 Q. But one of these authors; is</p> <p>18 that right?</p> <p>19 A. It would -- yes.</p> <p>20 Q. Why did you not include this</p> <p>21 paper on either your reliance list or your</p> <p>22 literature list?</p> <p>23 A. I didn't have it at the time</p> <p>24 that those were formulated.</p>



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<p>1 Q. Did you have access to the</p> <p>2 appendices and supplemental tables that are</p> <p>3 referred to in the Taher 2018 publication</p> <p>4 which we've marked as Exhibit 7?</p> <p>5 A. The ones that are not in</p> <p>6 this -- in this document or --</p> <p>7 Q. Yes.</p> <p>8 A. Those -- I have not thoroughly</p> <p>9 examined those, but I do have access to them.</p> <p>10 Q. How do you have access to those</p> <p>11 appendices and supplemental tables?</p> <p>12 A. They were also provided to me</p> <p>13 by plaintiffs' counsel.</p> <p>14 Q. Has the Taher publication,</p> <p>15 which we've marked as Exhibit 7, been peer</p> <p>16 reviewed?</p> <p>17 A. It's in the process. This is a</p> <p>18 manuscript that's just been accepted for</p> <p>19 publication, so it has gone through peer</p> <p>20 review.</p> <p>21 Q. It has gone through peer</p> <p>22 review --</p> <p>23 A. That's my understanding.</p> <p>24 Q. -- and Exhibit 7 is the article</p>	<p>1 A. Yes, I have.</p> <p>2 Q. Do you know any of the authors</p> <p>3 of this paper, Exhibit 7?</p> <p>4 A. No, I don't.</p> <p>5 Q. Do you know the source of</p> <p>6 funding for this paper?</p> <p>7 A. I -- I think the sources of</p> <p>8 funding are mentioned in here.</p> <p>9 Q. Other than what's mentioned in</p> <p>10 the paper, Exhibit 7, do you have any</p> <p>11 knowledge as to the sources of funding?</p> <p>12 A. There's a combination of</p> <p>13 sources. In part, this work is funded</p> <p>14 through the plaintiffs' attorneys.</p> <p>15 Q. Have you communicated with any</p> <p>16 of the authors of this paper?</p> <p>17 A. No.</p> <p>18 Q. Do you know the credentials of</p> <p>19 any of the authors of this paper?</p> <p>20 A. I haven't investigated that.</p> <p>21 Q. In your epidemiological work</p> <p>22 outside of litigation, do you rely on</p> <p>23 articles that are funded at least in part by</p> <p>24 plaintiffs' counsel in litigation?</p>
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<p>1 that you believe will be published; is that</p> <p>2 right?</p> <p>3 A. This is a -- this is a working</p> <p>4 manuscript which has gone through at least</p> <p>5 part of the peer-review process. There may</p> <p>6 be minor edits that occur to this, but this</p> <p>7 is substantially the final article.</p> <p>8 Q. How do you know that?</p> <p>9 A. That's the general process of</p> <p>10 submitting publications to peer-reviewed</p> <p>11 article -- journals.</p> <p>12 Q. How do you know -- I'm sorry,</p> <p>13 did you finish?</p> <p>14 A. I'm finished.</p> <p>15 Q. How did you know the status of</p> <p>16 the peer-review process with respect to</p> <p>17 Exhibit 7?</p> <p>18 A. Because it's been accepted for</p> <p>19 publication.</p> <p>20 Q. How do you know that?</p> <p>21 A. That, I was told by the</p> <p>22 plaintiffs' attorneys.</p> <p>23 Q. And you've accepted that; is</p> <p>24 that right?</p>	<p>1 A. If the articles represent good</p> <p>2 science, I don't really pay much attention or</p> <p>3 worry about the funding source.</p> <p>4 Q. Do you know what conflicts of</p> <p>5 interest any of the authors have?</p> <p>6 A. I don't know specifically. I</p> <p>7 can't recall if they're outlined in here.</p> <p>8 But the -- those are also evaluated based on</p> <p>9 the peer-review process.</p> <p>10 Q. Do you know whether some of the</p> <p>11 authors are serving as consultants to</p> <p>12 plaintiffs' counsel in this litigation?</p> <p>13 A. I know that -- no, I don't know</p> <p>14 that. Excuse me, I gave an incorrect answer.</p> <p>15 Q. Sure. Correct it, please.</p> <p>16 A. I mentioned that part of the</p> <p>17 funding for this research came from</p> <p>18 plaintiffs' counsel, and I'm not -- I don't</p> <p>19 know that that's the case. I was thinking of</p> <p>20 another research report when I said that.</p> <p>21 Q. Do you know whether or not, at</p> <p>22 least in part, funding for this paper, the</p> <p>23 Taher paper, came from plaintiffs' counsel?</p> <p>24 A. No, I don't.</p>

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<p>1 Q. Taher, this paper, Exhibit 7, 2 concludes that asbestos contamination does 3 not explain ovarian cancer, correct? 4 A. It does come to that general 5 conclusion. 6 Q. That's a different conclusion 7 than you have formulated in this matter; is 8 that right? 9 A. No, it's not. 10 Q. You agree that asbestos 11 contamination does not explain ovarian 12 cancer; is that right? 13 A. It doesn't completely explain 14 ovarian cancer. 15 Q. Does it explain ovarian cancer? 16 MS. O'DELL: Objection, asked 17 and answered. 18 A. I -- I don't believe it 19 completely explains ovarian cancer, no. 20 BY MR. ZELLERS: 21 Q. Turn to page 41 of Exhibit 7. 22 Look at the last three lines of the paper. 23 The authors of the Taher publication state: 24 The similarity of findings between studies</p>	<p>1 factors is consistency; is that right? 2 A. Yes. 3 Q. You, in fact, are opining in 4 this case that there is consistency among the 5 talcum powder ovarian cancer studies and 6 publications; is that right? 7 A. Yes. 8 Q. The authors of the Taher paper 9 disagree with that conclusion; is that right? 10 MS. O'DELL: Object to the 11 form. 12 A. I don't think they disagree 13 with that. 14 BY MR. ZELLERS: 15 Q. Turn to page 25, Table 2. This 16 is, again, something that you have reviewed 17 in preparation for your deposition; is that 18 right? 19 A. Well, I didn't review it in 20 preparation for the deposition, but I've 21 reviewed it recently. 22 Q. At the request of plaintiffs' 23 counsel, correct? 24 A. Yes.</p>
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<p>1 published prior to and after this point 2 suggest asbestos contamination does not 3 explain the positive association between 4 perineal use of talc powder and the risk of 5 ovarian cancer. 6 Did I correctly state their 7 conclusion? 8 A. Well, there was a final clause 9 of the sentence, but yes, you correctly read 10 that. 11 Q. The Taher authors also 12 discussed the lack of consistency among the 13 various talcum powder studies; is that right? 14 MS. O'DELL: Object to the 15 form. 16 A. I'm sorry, could you repeat 17 that question? 18 BY MR. ZELLERS: 19 Q. Sure. 20 You looked at the Bradford Hill 21 factors in formulating your opinion; is that 22 right? 23 A. Yes. 24 Q. One of the Bradford Hill</p>	<p>1 Q. Table 2 is a summary of 2 evidence for each of the Hill criteria of 3 causation as applied to perineal application 4 of talc and ovarian cancer. 5 Do you see that? 6 A. Yes. 7 Q. Under Consistency, they state 8 that 15 out of 30 studies reported positive 9 and significant associations; is that right? 10 A. Yes. 11 Q. 15 out of 30, that's 50%, 12 right? 13 A. Yes. 14 Q. 50% is no better than a coin 15 toss; is that right? 16 MS. O'DELL: Object to the 17 form. 18 A. Well, I would have to also 19 mention that the majority of those 30 studies 20 found positive associations. These are the 21 ones that showed positive associations that 22 rose to the level of statistical 23 significance. 24 ///</p>



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<p>1 BY MR. ZELLERS:</p> <p>2 Q. If an association is not</p> <p>3 statistically significant, then it can be due</p> <p>4 to chance; is that right?</p> <p>5 A. But if it's due to chance over</p> <p>6 and over and over again, and you keep getting</p> <p>7 a positive association, that argues very</p> <p>8 strongly against the chance as being the only</p> <p>9 factor.</p> <p>10 Q. Can you answer my question: A</p> <p>11 lack of a statistically significant</p> <p>12 association is consistent with or can be</p> <p>13 consistent with no risk, correct?</p> <p>14 MS. O'DELL: Objection to form,</p> <p>15 asked and answered.</p> <p>16 A. If you're referring to an</p> <p>17 individual study, that might be the case;</p> <p>18 however, when considering the Bradford Hill</p> <p>19 criterion of consistency, you look at the</p> <p>20 overall body of the literature and what it</p> <p>21 tells you.</p> <p>22 There's an obvious statistical</p> <p>23 trend toward positive connection between</p> <p>24 talcum powder perineal application and the</p>	<p>1 studies that have shown a biological gradient</p> <p>2 at -- especially in relation to some of the</p> <p>3 subtypes of ovarian cancer.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. And I'm going to ask you about</p> <p>6 those questions, but right now I'm just</p> <p>7 asking you about the Taher paper.</p> <p>8 A. Well, I'm trying to just</p> <p>9 completely answer your question.</p> <p>10 Q. I'm asking you about the Taher</p> <p>11 paper. You understand?</p> <p>12 A. Yes. This is all from the</p> <p>13 Taher paper that I read you.</p> <p>14 Q. Section 3.3.1 talks about</p> <p>15 evidence from human studies. That's on</p> <p>16 page 20; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. This section talks about</p> <p>19 whether or not there is a consistent</p> <p>20 dose-response found in those studies; is that</p> <p>21 right?</p> <p>22 MS. O'DELL: What sentence are</p> <p>23 you pointing to?</p> <p>24 MR. ZELLERS: I'm asking the</p>
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<p>1 occurrence of ovarian cancer, and the more</p> <p>2 evidence that mounts, the more strongly that</p> <p>3 association is proven.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Would you say that 15 out of 30</p> <p>6 means there are consistent results across</p> <p>7 studies?</p> <p>8 A. I think I've just explained to</p> <p>9 you how I believe there are consistent</p> <p>10 results across studies.</p> <p>11 Q. The authors of the Taher paper</p> <p>12 also conclude that they do not find a</p> <p>13 consistent dose-response in the papers that</p> <p>14 look at perineal application of talc and</p> <p>15 ovarian cancer; is that right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. Well, what they actually say is</p> <p>19 that about half of the epidemiological</p> <p>20 studies assess only one level of talc</p> <p>21 exposure, ever versus never. So it's not</p> <p>22 possible from those studies to establish a</p> <p>23 biological gradient.</p> <p>24 However, there are a number of</p>	<p>1 doctor questions based upon his review</p> <p>2 of the paper, Ms. O'Dell.</p> <p>3 MS. O'DELL: Okay. Feel free</p> <p>4 to review it, Doctor, if you need to.</p> <p>5 THE WITNESS: I'm just taking a</p> <p>6 look at this section.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. And if it helps you, look on</p> <p>9 page 21, lines 174 through 177.</p> <p>10 (Document review.)</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. I only want to ask you about</p> <p>13 two sentences. Are you ready for me to ask</p> <p>14 you my question?</p> <p>15 A. Just one moment, please.</p> <p>16 Q. Sure.</p> <p>17 (Document review.)</p> <p>18 THE WITNESS: All right, I'm</p> <p>19 ready for your question.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. The Taher paper states that</p> <p>22 many of the studies only reported on the</p> <p>23 ovarian cancer risk assessing one exposure</p> <p>24 category and that exposure response analyses</p>

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<p>1 were not done in all studies; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. When conducted, findings from</p> <p>4 trend analyses were not consistent; is that</p> <p>5 correct?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Yes.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. All right. With respect -- I'm</p> <p>11 done with that paper.</p> <p>12 You discuss your opinion</p> <p>13 number 1 on page 7 of your report; is that</p> <p>14 right?</p> <p>15 A. Yes.</p> <p>16 Q. You first state on page 7 that</p> <p>17 you believe talcum powder is immunogenic and</p> <p>18 produces chronic inflammation in the tissues;</p> <p>19 is that right?</p> <p>20 A. Yes.</p> <p>21 Q. You state that other components</p> <p>22 in talcum powder, including mineral fibers,</p> <p>23 asbestos, fibrous talc, carcinogenic metals</p> <p>24 and other chemicals intensify the</p>	<p>1 inflammation in the tissues in which it</p> <p>2 sequesters; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Assuming for the moment that</p> <p>5 talc can reach the ovaries, is it your</p> <p>6 opinion that talc produces chronic</p> <p>7 inflammation in the ovaries and that this</p> <p>8 somehow leads to ovarian cancer?</p> <p>9 A. It is my opinion that talc</p> <p>10 produces chronic inflammation in the</p> <p>11 epithelial tissues of the ovaries and</p> <p>12 surrounding epithelial tissues and leads to</p> <p>13 both carcinogenesis initiation and promotion.</p> <p>14 Q. There are no reports in the</p> <p>15 literature of externally applied talc leading</p> <p>16 to inflammation, granulomas, fibrosis or</p> <p>17 adhesions anywhere along a woman's</p> <p>18 reproductive tract, correct?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form, asked and answered.</p> <p>21 A. Well, that's similar to the</p> <p>22 question that you asked earlier, and although</p> <p>23 I'm not aware of experimental reports that</p> <p>24 specifically jive with that condition,</p>
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<p>1 inflammatory response and stimulate cell</p> <p>2 growth and proliferation; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Other than asbestos, what</p> <p>5 mineral fibers in talc intensify the</p> <p>6 inflammatory response?</p> <p>7 A. Well, the endogenous fibrous</p> <p>8 talc fibers also intensify the response.</p> <p>9 Q. Other than asbestos and fibrous</p> <p>10 talc fibers, what mineral fibers in talc do</p> <p>11 you believe intensify the inflammatory</p> <p>12 response?</p> <p>13 A. I'm not really able to answer</p> <p>14 that question because I don't have a specific</p> <p>15 opinion about it. I'm not a geologist.</p> <p>16 Q. Are the other chemicals that</p> <p>17 you refer to in this section fragrance</p> <p>18 chemicals?</p> <p>19 A. Yes.</p> <p>20 Q. Any others?</p> <p>21 A. None that are intentionally</p> <p>22 added.</p> <p>23 Q. You claim, again on page 7,</p> <p>24 that talcum powder produces chronic</p>	<p>1 certainly there are a lot of theoretical</p> <p>2 reports that have been published.</p> <p>3 For example, Dr. Ness' article</p> <p>4 from '99 lays out the theory of inflammation</p> <p>5 and relates that to talc exposure from</p> <p>6 perineal application.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. This is your colleague,</p> <p>9 Dr. Ness; is that right?</p> <p>10 A. Ness, and Coussens, when she</p> <p>11 was at Pittsburgh.</p> <p>12 Q. Dr. Ness, you showed her your</p> <p>13 report and asked for her comments; is that</p> <p>14 right?</p> <p>15 A. I didn't show her the report.</p> <p>16 Q. Well, you talked to her about</p> <p>17 and showed her your conclusions and your</p> <p>18 opinions; is that right?</p> <p>19 A. No, I talked to her about the</p> <p>20 paper.</p> <p>21 Q. Her paper?</p> <p>22 A. Yes.</p> <p>23 Q. Did you share with her that you</p> <p>24 were going to be an expert for the plaintiffs</p>

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<p style="text-align: right;">Page 118</p> <p>1 in this litigation?</p> <p>2 A. No, I didn't.</p> <p>3 Q. Did she wonder or ask why it</p> <p>4 was that you were researching or looking into</p> <p>5 this issue?</p> <p>6 A. She -- I think she may have,</p> <p>7 yeah.</p> <p>8 Q. And what did you tell her?</p> <p>9 A. I told her I had been recently</p> <p>10 asked to look into it.</p> <p>11 Q. Did you tell her that you'd</p> <p>12 been asked to look into it by counsel for</p> <p>13 plaintiffs in the talc litigation?</p> <p>14 A. No, I didn't.</p> <p>15 Q. And that never came up; is that</p> <p>16 right?</p> <p>17 A. It didn't.</p> <p>18 Q. And she never talked to you or</p> <p>19 told you about her experience and her work as</p> <p>20 counsel -- strike that, as an expert for</p> <p>21 plaintiffs; is that your testimony?</p> <p>22 A. Yes. It was a very brief</p> <p>23 conversation.</p> <p>24 Q. If up to 50% of all U.S. women</p>	<p style="text-align: right;">Page 120</p> <p>1 talc relating to that, and to my knowledge,</p> <p>2 there are no experimental reports or case</p> <p>3 reports that can document that at the current</p> <p>4 time.</p> <p>5 Q. Granulomas, fibrosis and</p> <p>6 adhesions do not cause ovarian cancer,</p> <p>7 correct?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. The inflammatory process that</p> <p>11 is intimately connected with granuloma</p> <p>12 formation may well be the same process that</p> <p>13 results in mutation and promotion of ovarian</p> <p>14 cancer. So I -- I could not agree completely</p> <p>15 with your statement.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Is there a good scientific</p> <p>18 basis today to opine that granulomas,</p> <p>19 fibrosis or adhesions cause ovarian cancer?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. No, I don't think they cause</p> <p>23 ovarian cancer.</p> <p>24 ///</p>
<p style="text-align: right;">Page 119</p> <p>1 have used genital talc, shouldn't there be</p> <p>2 studies which have shown inflammation,</p> <p>3 granulomas, fibrosis or adhesions in a</p> <p>4 woman's reproductive tract?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. Well, there are studies that</p> <p>8 show those things.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Please, tell me the published</p> <p>11 studies that demonstrate inflammation,</p> <p>12 granulomas, fibrosis or adhesions in a</p> <p>13 woman's reproductive tract from externally</p> <p>14 applied talc?</p> <p>15 A. Well, you're adding a new</p> <p>16 condition now.</p> <p>17 Q. I'm sorry if I didn't add that</p> <p>18 before.</p> <p>19 A. There are multiple studies that</p> <p>20 show inflammation and other inflammatory</p> <p>21 reactions in connection with the occurrence</p> <p>22 of ovarian cancer.</p> <p>23 The piece that you're now</p> <p>24 asking for is the external application of</p>	<p style="text-align: right;">Page 121</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Would you agree that not all</p> <p>3 inflammatory conditions lead to cancer?</p> <p>4 A. Yes.</p> <p>5 Q. It's true that all of us</p> <p>6 experience inflammatory reactions of one sort</p> <p>7 or another, including chronic conditions,</p> <p>8 that do not lead to cancer, correct?</p> <p>9 A. That's correct. Although there</p> <p>10 is a strong relationship between inflammatory</p> <p>11 processes and the occurrence of cancers, and</p> <p>12 some of those inflammatory diseases that</p> <p>13 you're referring to also have associations</p> <p>14 with increased rates of cancers.</p> <p>15 MR. ZELLERS: Move to strike as</p> <p>16 nonresponsive.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Rheumatoid arthritis is an</p> <p>19 inflammatory condition; is that right?</p> <p>20 A. Yes, it is.</p> <p>21 Q. Does it increase the risk of</p> <p>22 ovarian cancer?</p> <p>23 A. I think I -- it does -- it's</p> <p>24 not associated with ovarian cancer, but I</p>

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<p>1 think it may be associated with other</p> <p>2 cancers.</p> <p>3 Q. Does -- strike that.</p> <p>4 Is psoriasis an inflammatory</p> <p>5 condition?</p> <p>6 A. Generally, it is.</p> <p>7 Q. Is it associated with an</p> <p>8 increased risk of ovarian cancer?</p> <p>9 A. Not that I'm aware.</p> <p>10 Q. In your report you state that</p> <p>11 inflammation is a normal body process that</p> <p>12 leads to the thwarting of infection and rapid</p> <p>13 healing; is that right?</p> <p>14 A. That's correct.</p> <p>15 Q. If your inflammation theory is</p> <p>16 correct, why doesn't inflammation generally,</p> <p>17 such as in pelvic inflammatory disease, cause</p> <p>18 ovarian cancer?</p> <p>19 A. It may do so.</p> <p>20 Q. You are opining under oath here</p> <p>21 that pelvic inflammatory disease causes</p> <p>22 ovarian cancer?</p> <p>23 A. I think there are experts who</p> <p>24 have concluded that.</p>	<p>1 A. This is a list that I've put</p> <p>2 together of some of the studies I've</p> <p>3 considered and how they relate to things I</p> <p>4 might testify to today.</p> <p>5 Q. Why did you not tell me about</p> <p>6 your list that you brought with you today</p> <p>7 before now?</p> <p>8 A. Well, I'm telling you about it</p> <p>9 now.</p> <p>10 Q. My question is why did you not,</p> <p>11 when I asked you what you brought to the</p> <p>12 deposition today, not take the list out and</p> <p>13 show us the list?</p> <p>14 A. I didn't think of it.</p> <p>15 Q. Okay. We'll mark your list as</p> <p>16 Deposition Exhibit 15.</p> <p>17 (Carson Deposition Exhibit 15</p> <p>18 marked.)</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. These are a number of notes,</p> <p>21 four pages of notes. Are these all your</p> <p>22 notes?</p> <p>23 A. Yes.</p> <p>24 Q. First page has got a section of</p>
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<p>1 Q. What study are you relying on</p> <p>2 for that opinion or statement?</p> <p>3 A. That's not part of the opinions</p> <p>4 that I've been asked to consider in this --</p> <p>5 in this case.</p> <p>6 Q. As you sit here, can you cite</p> <p>7 me a publication or a study that finds that</p> <p>8 pelvic inflammatory disease causes ovarian</p> <p>9 cancer?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Well, I have -- I have a list</p> <p>13 of studies that relate inflammation to</p> <p>14 ovarian cancer and other cancers.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Can you name me a study or a</p> <p>17 publication?</p> <p>18 A. Okay. I think I have my list</p> <p>19 here.</p> <p>20 Q. You brought other materials</p> <p>21 with you?</p> <p>22 A. I brought this list.</p> <p>23 Q. All right. Well, what list are</p> <p>24 you pulling out of your pocket?</p>	<p>1 articles on asbestos and ovarian cancer; is</p> <p>2 that right?</p> <p>3 A. Yes.</p> <p>4 Q. It also has inflammation and</p> <p>5 cancer and a number of studies; is that</p> <p>6 right?</p> <p>7 A. Yes.</p> <p>8 Q. Second page has got cohort,</p> <p>9 where you've listed out the four cohort</p> <p>10 studies; is that right?</p> <p>11 A. Yes.</p> <p>12 Q. Beneath that are the</p> <p>13 meta-analyses where you've listed those out</p> <p>14 and made some notes on those, correct?</p> <p>15 A. Yes.</p> <p>16 Q. The back page of the second</p> <p>17 page has got a listing of a number of the</p> <p>18 case-control studies, correct?</p> <p>19 A. Yes. Those are duplicated on</p> <p>20 another page.</p> <p>21 Q. The third page has got a</p> <p>22 section on migration and studies that you're</p> <p>23 looking at for that proposition, correct?</p> <p>24 A. Correct.</p>

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<p>1 Q. Underneath that, ovarian cancer</p> <p>2 risk; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Underneath that, talc and other</p> <p>5 cancer; is that right?</p> <p>6 A. Yes.</p> <p>7 Q. And then on the last page,</p> <p>8 page 4, is a listing of the case-control</p> <p>9 studies with the odds ratios and confidence</p> <p>10 intervals; is that right?</p> <p>11 A. For the most part, yes.</p> <p>12 Q. All right. So looking now at</p> <p>13 your list of studies that you have prepared,</p> <p>14 which study demonstrates or supports the</p> <p>15 proposition that pelvic inflammatory disease</p> <p>16 causes ovarian cancer?</p> <p>17 A. Looking through here, I don't</p> <p>18 have that item specifically in my notes, but</p> <p>19 I'm just using my notes to refresh my memory</p> <p>20 about the individual research report. I</p> <p>21 think the Coussens and Werb paper from 2010</p> <p>22 talks about general mechanisms of</p> <p>23 inflammation in relation to the occurrence of</p> <p>24 ovarian cancer.</p>	<p>1 authors conclude that pelvic inflammatory</p> <p>2 disease causes ovarian cancer? Do you</p> <p>3 believe each of the authors in the studies</p> <p>4 that you've identified, that their studies</p> <p>5 stand for that proposition?</p> <p>6 MS. O'DELL: Object to form,</p> <p>7 asked and answered.</p> <p>8 A. I think all of the studies that</p> <p>9 I've identified for this question do allude</p> <p>10 to that, yes.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. That pelvic inflammatory</p> <p>13 disease causes ovarian cancer, correct?</p> <p>14 A. That it is a -- it's a factor,</p> <p>15 yes.</p> <p>16 Q. It's a cause. That's what they</p> <p>17 state in those papers, right?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. That's your testimony?</p> <p>22 MS. O'DELL: Excuse me,</p> <p>23 misstates his testimony. Object to</p> <p>24 the form.</p>
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<p>1 And there's the Ness and</p> <p>2 Cottreau paper from '99.</p> <p>3 Okada has discussed it in the</p> <p>4 2007 paper. And there's a paper from 2001</p> <p>5 which is Balkwill and Mantovani which</p> <p>6 discusses the relationship between talc and</p> <p>7 ovarian cancer and also discusses the</p> <p>8 relationship to other sources of</p> <p>9 inflammation.</p> <p>10 Q. Each of those papers that</p> <p>11 you've identified you believe state that</p> <p>12 pelvic inflammatory disease is a cause of</p> <p>13 ovarian cancer, correct?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. Well, I don't think they state</p> <p>17 that in so many words, but if you read the</p> <p>18 paper and you understand that -- what pelvic</p> <p>19 inflammatory disease is and its relationship</p> <p>20 to inflammatory processes in general, yes,</p> <p>21 that's what they're saying.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Doctor, my question to you was:</p> <p>24 Are you aware of any papers in which the</p>	<p>1 A. I would say it's a factor and</p> <p>2 leave it at that.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. All right. Are you familiar</p> <p>5 with pleurodesis?</p> <p>6 A. I am.</p> <p>7 Q. Does a pleurodesis cause</p> <p>8 cancer?</p> <p>9 A. It is not known to, although it</p> <p>10 might.</p> <p>11 Q. Are you familiar with the</p> <p>12 study, 1979, A survey of the long-term</p> <p>13 effects of talc and kaolin pleurodesis?</p> <p>14 A. Can tell me who the author of</p> <p>15 that was?</p> <p>16 Q. Sure. The author is -- this is</p> <p>17 from the Research Committee of the British</p> <p>18 Thoracic Association. The members of the</p> <p>19 subcommittee were Chappell, Johnson, Charles,</p> <p>20 Wagner, Seal, Berry and Nicholson.</p> <p>21 Are you familiar with that</p> <p>22 paper?</p> <p>23 A. I'm not familiar with the</p> <p>24 paper. I may have looked at it in the past.</p>

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<p>1 Q. We'll take a look at it. We'll 2 mark it as Deposition Exhibit 16. 3 (Carson Deposition Exhibit 16 4 marked.) 5 A. Thank you. 6 MS. O'DELL: Thank you. 7 BY MR. ZELLERS: 8 Q. This was a study that looked at 9 the association between pleurodesis and lung 10 cancer; is that right? 11 A. Yes. 12 Q. It's a study that you cite on 13 page 1 of your literature list; is that 14 right? 15 A. Okay. Yes. 16 Q. So you've read it; is that 17 right? 18 A. I have. 19 Q. You've considered it; is that 20 right? 21 A. Yes. 22 Q. They looked at 210 patients 23 that underwent a pleurodesis with talc or 24 kaolin 14 to 40 years before; is that right?</p>	<p>1 form. 2 A. I think that was the hypothesis 3 of those research reports. 4 BY MR. ZELLERS: 5 Q. And, in fact, the NSAID studies 6 do not find a consistent causal reduction in 7 the risk of ovarian cancer; is that right? 8 A. I think that's correct. 9 Q. In your report you also state 10 that studies show that use of cornstarch 11 instead of talcum powder reduces the risk of 12 ovarian cancer; is that right? 13 A. Yes. 14 Q. If inflammation causes cancer, 15 why would cornstarch be a superior 16 alternative to talc? 17 A. The reason is that cornstarch, 18 being a biological product, is much -- it 19 does have a rapid clearance from the body, 20 even when sequestered, in comparison with a 21 mineral substance like talc. 22 Q. Well, in fact, cornstarch 23 causes or increases the risk of inflammation, 24 granulomas, fibrosis and adhesions, correct?</p>
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<p>1 A. That's correct. 2 Q. And they found that there was 3 no increased incidence of lung cancer and no 4 cases of mesothelioma; is that right? 5 A. That's correct. 6 Q. Why don't -- well, strike that. 7 You're aware of the studies 8 that have looked at antiinflammatory drugs 9 and aspirin use with respect to whether or 10 not they're associated with -- let me 11 withdraw that. 12 Are you familiar with the NSAID 13 and aspirin use studies relating to the 14 incidence of ovarian cancer in chronic users? 15 A. I'm familiar with some of 16 those, yes. 17 Q. If your theory is correct that 18 inflammation causes ovarian cancer, then you 19 would expect that the studies of NSAIDs and 20 aspirin use, antiinflammatory drugs that 21 reduce inflammation, would consistently 22 reduce the incidence of ovarian cancer, 23 correct? 24 MS. O'DELL: Object to the</p>	<p>1 A. It may, yes. 2 Q. Just like you claim talcum 3 powder increases the risk of inflammation, 4 granulomas, fibrosis and adhesions; is that 5 right? 6 MS. O'DELL: Object to the 7 form. 8 A. I think you are -- you're 9 parsing terms here. That list of things were 10 your words. I was agreeing with the 11 relationship between talc and inflammation in 12 ovarian epithelial tissue and the production 13 or granulomas. I did not discuss the 14 relationship between talc and adhesions or 15 fibrosis. There was one other thing on your 16 list. 17 BY MR. ZELLERS: 18 Q. Well, in fact, the FDA has 19 banned the use of cornstarch as a powder for 20 lubricating surgical gloves; is that right? 21 A. It has, but that's not the 22 reason. 23 Q. Well, the reason that they 24 banned the use of cornstarch is because it</p>



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<p>1 presented an unreasonable and substantial 2 risk of illness or injury and that that risk 3 cannot be corrected or eliminated by 4 labeling, correct? 5 A. I don't know the specific 6 language. It looks like you're reading from 7 a Federal Register document. 8 The main reason that cornstarch 9 has been banned as a lubricant in gloves is 10 because of the potential for transmission of 11 primarily respiratory problems through 12 inhalation, mostly by co-workers, not by 13 patients. 14 Q. You do agree that cornstarch 15 has been banned by the FDA for use in 16 surgical gloves; is that right? 17 A. All powdered gloves have been 18 essentially banned from hospitals and 19 operating rooms now. 20 Q. You also talk about 21 inflammation and oxidative stress; is that 22 right? 23 A. Yes. 24 Q. Does the presence of oxidative</p>	<p>1 Q. Why do you have to have a 2 special definition of "oxidative stress"? 3 I'm asking simply: Is there a publication or 4 a study which documents that oxidative stress 5 is involved in the development of ovarian 6 cancer? 7 MS. O'DELL: Object to the 8 form. 9 A. Sure. 10 BY MR. ZELLERS: 11 Q. And what paper are you going to 12 point me to? 13 A. Well, I'll point you to the 14 Ness paper to begin with, because it was one 15 of the earlier papers that related oxidative 16 stress from talc to the occurrence of ovarian 17 cancer. But the relationship between 18 inflammation, which essentially is the source 19 of the oxidative stress, and cancer goes all 20 the way back into the 19th Century in terms 21 of its proposal as a rationale. 22 Q. Is oxidative stress a variation 23 of inflammation as you're using that term 24 relating to a potential cause of ovarian</p>
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<p>1 stress in a tissue indicate that cancer will 2 develop in that tissue? 3 A. No. 4 Q. If exposure to a substance 5 causes oxidative stress in certain tissue, 6 does that mean exposure of all other tissues 7 to that substance will cause oxidative stress 8 in those tissues? 9 A. Not necessarily. 10 Q. Does the body have protective 11 mechanisms that can limit tissue damage from 12 oxidative stress? 13 A. Yes. 14 Q. Do all substances that cause 15 oxidative stress also cause cancer? 16 A. I'm not sure the answer to that 17 question is known. 18 Q. Are there any studies or 19 publications that indicate that oxidative 20 stress is involved in the development of 21 ovarian cancer? 22 A. If I can define the term 23 "oxidative stress," I could give you an 24 answer to that, that question.</p>	<p>1 cancer? 2 A. It's a component of 3 inflammation. 4 Q. As a toxicologist, how would 5 you define fibrous talc? 6 A. Fibrous talc is a form of talc 7 that is conformed into elongated structures 8 that have an aspect ratio of length greater 9 than width that is different from the 10 majority of talc which is the platy form. 11 Q. Do you consider yourself to be 12 an expert on fibrous talc? 13 A. No, I don't. 14 Q. Do you consider yourself to be 15 an expert on oxidative stress? 16 A. I have dealt a lot with issues 17 of oxidative stress and health effects 18 resulting from it. 19 Q. Do you consider yourself to be 20 an expert in oxidative stress? 21 MS. O'DELL: Objection, asked 22 and answered. 23 A. I'm not a specific expert in 24 oxidative stress, but I can -- I can opine</p>



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<p style="text-align: right;">Page 138</p> <p>1 regarding my professional understanding and 2 training. 3 BY MR. ZELLERS: 4 Q. You've never been involved in 5 terms of any research or publication on the 6 subject of oxidative stress and any 7 association with ovarian cancer, correct? 8 A. Not in terms of ovarian cancer, 9 no. 10 Q. You have not been involved in 11 any research or publication relating to the 12 subject of inflammation and its association 13 with ovarian cancer, correct? 14 A. No. All right. Yes, correct. 15 Q. Yes, it is correct? Okay. 16 You claim that the presence of 17 asbestos and fibrous talc further intensifies 18 the carcinogenic effect of talc; is that 19 right? 20 A. Yes. 21 Q. Is that statement different 22 from the statement directly above where you 23 allege that asbestos and mineral fibers 24 intensify the inflammatory response and</p>	<p style="text-align: right;">Page 140</p> <p>1 reports, the epidemiology first, is looking 2 at the relationship between perineal use of 3 dusting powders, talcum powders and ovarian 4 cancer. 5 Although there have been 6 efforts in some of those studies to 7 characterize the proportion or the 8 ingredients that would be either asbestos or 9 fibers, that's not done in all cases, and 10 it's not ruled out in any cases. 11 The -- also, the research 12 studies that have been performed, the 13 testing, for example, of the products 14 themselves are replete with reports of 15 components of these powders that are fibrous 16 in nature. 17 MR. ZELLERS: Move to strike as 18 nonresponsive. 19 BY MR. ZELLERS: 20 Q. Do you believe that all talcum 21 powder products that are on the market 22 contain asbestos? 23 MS. O'DELL: Object to the 24 form.</p>
<p style="text-align: right;">Page 139</p> <p>1 stimulate the cell growth and proliferation? 2 A. It's not different, no. 3 Q. Are your opinions dependent on 4 talc containing carcinogenic asbestos and/or 5 fibrous talc? 6 A. No. 7 Q. Do you believe that talcum 8 powder without asbestos causes ovarian 9 cancer? 10 A. I believe talcum powder causes 11 ovarian cancer. I have not seen any research 12 done on talcum powder that has been shown not 13 to contain asbestos. 14 Q. Your assumption that you have 15 made in formulating your opinions here is 16 that talcum powder contains asbestos; is that 17 right? 18 A. No. 19 Q. What assumption have you made 20 as to whether or not talcum powder contains 21 either asbestos or fibrous talc? 22 MS. O'DELL: Object to the 23 form. 24 A. Looking at the research</p>	<p style="text-align: right;">Page 141</p> <p>1 A. I don't know. 2 BY MR. ZELLERS: 3 Q. Does it matter to your opinion 4 as to whether or not the talcum powder 5 products, and particularly the talcum powder 6 products involved in this case, contain 7 asbestos? 8 A. I wouldn't have a way to be 9 able to answer that yes or no. 10 Q. Do you -- strike that. 11 Have you reached a conclusion 12 as to whether or not the talcum powder 13 products involved in this case contain 14 fibrous talc? 15 A. I think that most of them do. 16 Q. Does all of the talcum powder 17 contain fibrous talc or just some of it? 18 A. Certainly a lot of it does. 19 Q. The basis for your conclusion 20 that the talcum powder at issue in this case 21 contains fibrous talc is the testing reports 22 that plaintiffs' attorneys gave you? 23 MS. O'DELL: Object to the 24 form.</p>

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<p style="text-align: right;">Page 142</p> <p>1 A. Yes. Also Longo's publications 2 and reports. 3 BY MR. ZELLERS: 4 Q. You have reviewed the Longo 5 reports; is that right? 6 A. Yes. 7 Q. Have you ever met with him? 8 A. No. 9 Q. Do you know his qualifications? 10 A. I looked at his qualifications 11 at one point, but I don't recall exactly what 12 it is at this stage. 13 Q. Ever hear of him before this 14 lawsuit, your getting involved in the talc 15 litigation back in October of 2018? 16 A. No. 17 Q. Have you reviewed any of 18 Longo's testing where he did not find 19 asbestos? 20 A. I -- the only thing I've 21 reviewed are what's present in those reports 22 that I cited. 23 Q. Were you provided by counsel 24 for plaintiffs with any testing reports from</p>	<p style="text-align: right;">Page 144</p> <p>1 MS. O'DELL: Object to the 2 form. 3 A. That wasn't my charge. I defer 4 to the other experts in this case. 5 BY MR. ZELLERS: 6 Q. Do you have an opinion on what 7 type of asbestos you believe is in the talcum 8 powder products at issue in this case? 9 A. Well, there have been various 10 types shown, but I think for the most part 11 it's tremolite and anthophyllite. 12 Q. Are you familiar with 13 crocidolite? 14 A. Yes. 15 Q. Is crocidolite found in talcum 16 powder or baby powder? 17 A. It's not commonly found in it. 18 Q. You believe that the 19 asbestos -- types of asbestos that may be in 20 the talcum powder at issue in this case is 21 tremolite and acidolite [sic]? 22 MS. O'DELL: Objection. 23 A. Anthophyllite. There are 24 others found, but you asked for most common.</p>
<p style="text-align: right;">Page 143</p> <p>1 Longo where he did not find asbestos? 2 A. There are some of those listed 3 in his reports. 4 Q. Have you reviewed the FDA's 5 testing of talcum powder products? 6 A. The FDA didn't really do much 7 testing of talcum powder products. 8 Q. Have you reviewed the FDA's 9 testing of talcum powder products? 10 MS. O'DELL: Objection, vague. 11 A. The only FDA testing that I 12 looked at was the -- I have it referenced in 13 my list, but the FDA, based on a 14 recommendation, requested samples from 15 various companies, I think nine different 16 sources of talc. They received four and 17 tested those. And based on their test method 18 determined that there was not a -- not 19 evidence of a significant hazard. 20 BY MR. ZELLERS: 21 Q. Have you made any effort to 22 quantify the amount of any alleged 23 contaminant in the Johnson &amp; Johnson Consumer 24 talcum powder?</p>	<p style="text-align: right;">Page 145</p> <p>1 BY MR. ZELLERS: 2 Q. Most common you believe are 3 tremolite and anthophyllite? 4 A. Anthophyllite. 5 Q. Anthophyllite. Those two; is 6 that right? 7 A. Yes. 8 Q. What types of asbestos are 9 associated with ovarian cancer? 10 A. Well, I'll go back to my list 11 again. Crocidolite is associated with 12 ovarian cancer in the Acheson report from 13 1982, which was from female gas mask 14 manufacturers in England who made gas masks 15 during the period of the Second World War, 16 and crocidolite is associated with that with 17 a fairly high relative risk of 2.96. 18 Chrysotile asbestos had also a positive 19 relative risk of 1.74. 20 There was a study of factory 21 workers and pipe ladders in east London, 22 which is the Berry report from 2000, that 23 showed a relative risk of 2.53, and those 24 workers were exposed to primarily asbestos</p>

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<p>1 cement products and plasters, so the --</p> <p>2 Q. What type of asbestos, if you</p> <p>3 know?</p> <p>4 A. That would have been primarily</p> <p>5 amphibole asbestos types, which would include</p> <p>6 crocidolite and tremolite and anthophyllite,</p> <p>7 amosite is in that category.</p> <p>8 Bertolotti in 2008 published a</p> <p>9 report -- actually, there were several</p> <p>10 reports that resulted from the Eternit</p> <p>11 factory studies in Casale Monferrato in</p> <p>12 Italy, which was a plant that manufactured</p> <p>13 cement sheet and corrugated tubing, and there</p> <p>14 were a number of studies that showed elevated</p> <p>15 relative risks in persons exposed to asbestos</p> <p>16 in that work, and that would also have been</p> <p>17 amphibole asbestos types.</p> <p>18 Q. The studies that you've recited</p> <p>19 for us, those are all occupational studies;</p> <p>20 is that right?</p> <p>21 A. Yes. I've got a lot more.</p> <p>22 Q. Well, and it's on your list,</p> <p>23 which we marked as Exhibit 15; is that right?</p> <p>24 A. That's correct.</p>	<p>1 But based on my current</p> <p>2 understanding, I don't believe they've ever</p> <p>3 been totally successful in doing so.</p> <p>4 So in answer to your question,</p> <p>5 which I think was, was there ever a point in</p> <p>6 time where you believe the talcum powder</p> <p>7 products involved in this case were not</p> <p>8 contaminated with asbestos, no.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. You cite in your report,</p> <p>11 page 5, to two exhibits to the depositions of</p> <p>12 John Hopkins and Julie Pier in support of</p> <p>13 your opinion that talcum powder products</p> <p>14 contain asbestos; is that right?</p> <p>15 A. That's correct.</p> <p>16 Q. Looking at page 5, footnote 1,</p> <p>17 you cite to Exhibit Hopkins-28 in the Hopkins</p> <p>18 deposition and Exhibit Pier-47 in the Pier</p> <p>19 deposition; is that right?</p> <p>20 A. That's correct.</p> <p>21 Q. Are you aware that those</p> <p>22 exhibits were created by plaintiffs' counsel?</p> <p>23 MS. O'DELL: Objection to form.</p> <p>24 A. I didn't -- I -- I don't know</p>
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<p>1 Q. All right. Those studies did</p> <p>2 not involve the perineal application of</p> <p>3 talcum powder products; is that right?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. It was not a factor in the</p> <p>7 study.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Crocidolite and chrysotile</p> <p>10 asbestos has generally not been found in</p> <p>11 talcum powder products, correct?</p> <p>12 A. In general, that's the case.</p> <p>13 Q. Was there ever a point in time</p> <p>14 where you believe that the talcum powder</p> <p>15 products involved in this case were not</p> <p>16 contaminated with asbestos?</p> <p>17 MS. O'DELL: Objection to form,</p> <p>18 vague as to time.</p> <p>19 A. My understanding is that Imerys</p> <p>20 and their predecessors and Johnson &amp; Johnson</p> <p>21 made significant efforts to reduce components</p> <p>22 of asbestos in their talc products over a</p> <p>23 number of years and made step-wise progress</p> <p>24 in doing that.</p>	<p>1 that and doesn't matter to me.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Do you know where the data in</p> <p>4 those exhibits come from?</p> <p>5 A. Well, they come from the two</p> <p>6 persons who are testifying who have produced</p> <p>7 them from their -- mostly from their business</p> <p>8 records.</p> <p>9 Q. Okay. So you believe that</p> <p>10 Exhibit Hopkins-28 to the Hopkins deposition</p> <p>11 and Exhibit Pier-47 to the Pier deposition</p> <p>12 come from the business records of the</p> <p>13 Johnson &amp; Johnson Company and Imerys?</p> <p>14 A. From the most part, there was</p> <p>15 a -- there was a table that was constructed</p> <p>16 during the deposition which was sort of a</p> <p>17 piece of summary information. I don't know</p> <p>18 if it's an exhibit to the deposition or if</p> <p>19 it's something separate from that, but it</p> <p>20 would not have been from business records,</p> <p>21 but occurred at the deposition itself.</p> <p>22 MS. O'DELL: Excuse me,</p> <p>23 Dr. Carson, would you like to see a</p> <p>24 copy of exhibit -- of the Hopkins</p>

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<p style="text-align: right;">Page 150</p> <p>1 Exhibit Hopkins-28 and Pier 2 Exhibit Pier-47 in answering these 3 questions? 4 THE WITNESS: If that's easy to 5 do, yes. 6 MS. O'DELL: It's very easy to 7 do. This is a copy of 8 Exhibit Hopkins-28 of the Hopkins 9 deposition and Exhibit Pier-47 of the 10 Pier deposition. 11 THE WITNESS: Okay. 12 BY MR. ZELLERS: 13 Q. Dr. Carson? 14 A. Yes, sir. 15 Q. Did you make any effort to 16 investigate the alternative explanations for 17 the data that's contained in those two 18 exhibits, Exhibit Hopkins-28 and 19 Exhibit Pier-47? 20 A. Alternative explanations, I'm 21 not sure what you mean by that. 22 Q. If the Johnson &amp; Johnson 23 company -- companies' scientists and Imerys' 24 scientists opined that those tests don't</p>	<p style="text-align: right;">Page 152</p> <p>1 exhibits you're looking at, 2 Exhibit Hopkins-28 and Exhibit Pier-47, were 3 included in talcum powder product sold by J&amp;J 4 Consumer Products? 5 MS. O'DELL: Objection to the 6 form, asked and answered. 7 A. No, I don't. 8 BY MR. ZELLERS: 9 Q. Have you confirmed -- strike 10 that. 11 What amount of asbestos 12 exposure is associated with ovarian cancer? 13 A. Any. 14 Q. Your testimony under oath is 15 that any asbestos exposure is associated with 16 ovarian cancer? 17 A. Any asbestos exposure and any 18 perineal application of talcum powder is 19 associated with an increased risk for ovarian 20 cancer. 21 Q. The amount of asbestos 22 contained -- or allegedly contained within 23 the baby powder is of no consequence, 24 correct?</p>
<p style="text-align: right;">Page 151</p> <p>1 actually show asbestos, you have no expertise 2 to dispute that, do you? 3 MS. O'DELL: Object to the 4 form. 5 A. No, I don't have any personal 6 expertise to dispute that. 7 BY MR. ZELLERS: 8 Q. Do you know whether or not any 9 of the talc product that is identified on 10 Exhibit Hopkins-28 and Exhibit Pier-47 was 11 actually used in the talcum powder products 12 that were sold by the Johnson &amp; Johnson 13 Consumer Products company? 14 MS. O'DELL: Objection to form. 15 A. I -- it's my understanding that 16 some of these results, at least -- in 17 particular from the Pier deposition, that 18 some of these results were from testing that 19 was done on material that had already been 20 shipped and probably incorporated into 21 products. 22 BY MR. ZELLERS: 23 Q. Do you know whether or not any 24 of the talc that is referred to on the two</p>	<p style="text-align: right;">Page 153</p> <p>1 MS. O'DELL: Object to the 2 form. 3 A. No, it is of consequence, and a 4 larger dose would be a greater hazard. But 5 that doesn't mean that a low dose is not a 6 hazard. 7 BY MR. ZELLERS: 8 Q. My question is: Do you know 9 the amount of alleged asbestos exposure 10 that's associated with ovarian cancer? 11 A. No. 12 Q. Do you know the type of ovarian 13 cancer that asbestos is associated with? 14 MS. O'DELL: Object to the 15 form. 16 A. It's associated mostly with the 17 collection of epithelial ovarian cancers -- 18 BY MR. ZELLERS: 19 Q. What -- 20 A. -- primarily serous. 21 Q. Does the type of ovarian cancer 22 vary based upon the type of asbestos? 23 A. Not that I'm aware of. 24 Q. You believe that all types of</p>

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<p>1 asbestos can produce all types of ovarian 2 cancer; is that correct? 3 MS. O'DELL: Object to the 4 form. 5 A. I suspect that some forms of 6 asbestos are much more carcinogenic than 7 others, and that would be true for the 8 ovaries as well as other structures in the 9 body. 10 BY MR. ZELLERS: 11 Q. Are you able to distinguish for 12 us what types of asbestos cause or are 13 associated with what types of ovarian cancer? 14 A. I don't think I'm able to make 15 those distinctions, but the studies I just 16 read to you regarding the relationship 17 between asbestos and ovarian cancer and the 18 others on my list do indicate that there are, 19 for example, in the Acheson study, there 20 were -- there was a positive relationship 21 between both crocidolite and chrysotile 22 exposure, and the crocidolite had a greater 23 effect on ovarian cancer than the chrysotile, 24 but did not have -- they were both positive.</p>	<p>1 A. That's background information 2 and my personal knowledge. 3 Q. You are not going to give an 4 opinion on mines, mining or milling in this 5 case; is that right? 6 A. Depends on the questions. 7 Q. Well, as you sit here today, do 8 you intend to give opinions on talc mining, 9 mines or milling? 10 A. It wasn't my intention, but if 11 asked a question that I think I'm qualified 12 to answer, I'll try to do it. 13 Q. Are you an expert on talc 14 mining and milling? 15 A. I'm an expert on industrial 16 processes in general, and if -- I have some 17 personal understanding of talc mining and 18 milling. 19 Q. Have you been personally 20 involved in talc mining and milling? 21 A. I haven't been involved in it; 22 I've observed it. 23 Q. Do you consider yourself to be 24 an expert in talc mining and milling?</p>
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<p>1 Q. What type of ovarian cancer? 2 A. That, I don't know at the 3 moment. I could look in the paper and see if 4 it's listed. 5 Q. There are a number of different 6 types of ovarian cancer; is that right? 7 A. That's correct. 8 Q. You are not familiar with J&amp;J 9 Consumer Products' procedures for milling or 10 mining; is that right? 11 MS. O'DELL: Object to the 12 form. 13 A. I'm familiar with some of their 14 procedures, yes. 15 BY MR. ZELLERS: 16 Q. Are you familiar with their 17 testing of source mines? 18 A. To some extent. 19 MS. O'DELL: Object to the 20 form. 21 BY MR. ZELLERS: 22 Q. Is it set forth in your report, 23 or is that just background information that 24 you looked at?</p>	<p>1 MS. O'DELL: Objection, asked 2 and answered. 3 A. No, I don't. 4 BY MR. ZELLERS: 5 Q. You have no independent basis 6 to say that cosmetic talc contains asbestos, 7 correct? 8 MS. O'DELL: Object to the 9 form. 10 A. What do you mean by independent 11 basis? 12 BY MR. ZELLERS: 13 Q. You have not done any testing 14 of talcum powder to determine whether it 15 contains asbestos or not; is that right? 16 A. No. All of my understanding is 17 based on other sources. 18 Q. And those other sources would 19 be, in part, the testing that was done by 20 Longo; is that right? 21 A. Yes, as well as the testing 22 that's reported in the -- in the literature 23 section as the Imerys test results and 24 quality control materials.</p>

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<p style="text-align: right;">Page 158</p> <p>1 Q. You're looking now back at the</p> <p>2 Pier Exhibit Pier-47 and the Hopkins</p> <p>3 Exhibit Hopkins-28; is that right?</p> <p>4 A. I was actually referring to the</p> <p>5 Imerys documents that are referenced toward</p> <p>6 the end of the literature exhibit to my</p> <p>7 report, but certainly the Exhibit Pier-47</p> <p>8 would be included there.</p> <p>9 Q. You have no independent basis</p> <p>10 to say that cosmetic talcum powder contains</p> <p>11 fibrous talc, correct?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I have no independent basis,</p> <p>15 no.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. You're familiar with the</p> <p>18 limitations of the research on a potential</p> <p>19 link between asbestos and ovarian cancer; is</p> <p>20 that right?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. I'm familiar with some research</p> <p>24 limitations in that question, yes.</p>	<p style="text-align: right;">Page 160</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. The Reid paper that I've handed</p> <p>3 you, what we've marked as Exhibit 17, looks</p> <p>4 at the issue: Does exposure to asbestos</p> <p>5 cause ovarian cancer.</p> <p>6 Is that right?</p> <p>7 A. Yes.</p> <p>8 Q. They talk about in terms of</p> <p>9 limitations on the first page, right-hand</p> <p>10 column, they say: Studies that have examined</p> <p>11 this issue have been limited for two major</p> <p>12 reasons.</p> <p>13 Is that right?</p> <p>14 A. Yes.</p> <p>15 Q. Number one, small number of</p> <p>16 cases, much fewer women than men have been</p> <p>17 exposed to asbestos, particularly in more</p> <p>18 heavily exposed occupational settings where</p> <p>19 relative risks are higher; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. How many of these studies --</p> <p>22 well, strike that.</p> <p>23 Would you agree that the</p> <p>24 studies in this area have been primarily</p>
<p style="text-align: right;">Page 159</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. You agree that research on the</p> <p>3 potential relationship between asbestos and</p> <p>4 ovarian cancer has only considered a small</p> <p>5 number of cases; is that right?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. Well, it's considered thousands</p> <p>9 of cases. Certainly in terms of the number</p> <p>10 of women who have experienced ovarian cancer</p> <p>11 it's small, but it's significant, and that's</p> <p>12 where we get research from that answers</p> <p>13 important questions.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Are you familiar with the Reid</p> <p>16 paper, 2011?</p> <p>17 A. Yes, but it's been a while</p> <p>18 since I've looked at it.</p> <p>19 Q. Well, I'll hand you a copy.</p> <p>20 We'll mark it as Exhibit 17.</p> <p>21 (Carson Deposition Exhibit 17</p> <p>22 marked.)</p> <p>23 MS. O'DELL: Thank you.</p> <p>24 ///</p>	<p style="text-align: right;">Page 161</p> <p>1 related to occupational exposure?</p> <p>2 A. Primarily, yes.</p> <p>3 Q. How many total women have been</p> <p>4 studied?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form. In this study, in this paper,</p> <p>7 or are you talking about in general?</p> <p>8 MR. ZELLERS: In general.</p> <p>9 A. I don't know the answer to</p> <p>10 that.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. How many women have been</p> <p>13 studied in nonoccupational studies?</p> <p>14 A. Well, very few in comparison to</p> <p>15 the occupational studies.</p> <p>16 Q. Are you aware of the</p> <p>17 difficulties that have existed over time in</p> <p>18 distinguishing between peritoneal</p> <p>19 mesothelioma and ovarian cancer?</p> <p>20 A. Yes.</p> <p>21 Q. What are those difficulties?</p> <p>22 A. There is a potential</p> <p>23 misclassification of one as the other because</p> <p>24 they have very common habits. They look very</p>



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<p>1 similar under light microscopy, and they're</p> <p>2 often difficult to distinguish, even by a</p> <p>3 pathologist, unless special tests are used.</p> <p>4 Often these cases occur in</p> <p>5 places where they don't have the access to</p> <p>6 special test equipment that can definitively</p> <p>7 distinguish, and so they are classified and</p> <p>8 we move on.</p> <p>9 Q. Another limitation of any</p> <p>10 studies in this area relate to the inability</p> <p>11 to account for nonoccupational risk factors</p> <p>12 for ovarian cancer other than age; is that</p> <p>13 right?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. Are you reading also from this</p> <p>17 paper or --</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. I was looking now at the</p> <p>20 Camargo paper. Are you familiar with the</p> <p>21 Camargo paper?</p> <p>22 A. If you have a copy of that, I'd</p> <p>23 like to look at it, if I'm going to answer</p> <p>24 questions about it.</p>	<p>1 take a minute to refresh yourself on</p> <p>2 the page --</p> <p>3 MR. ZELLERS: I'm looking under</p> <p>4 Discussion.</p> <p>5 MS. O'DELL: -- please feel</p> <p>6 free to do that.</p> <p>7 Excuse me, sir, I was talking.</p> <p>8 If you need to review the paper,</p> <p>9 Dr. Carson, please feel free to do</p> <p>10 that.</p> <p>11 MR. ZELLERS: This doctor has</p> <p>12 given 35 depositions. He is perfectly</p> <p>13 capable of handling himself. He does</p> <p>14 not need your advice as we go along.</p> <p>15 MS. O'DELL: Nor do I, Michael.</p> <p>16 So I'm going to deal with this witness</p> <p>17 in the way I choose, which is</p> <p>18 perfectly appropriate. If Dr. Carson</p> <p>19 needs to review the paper, he's going</p> <p>20 to review the paper. You may ask him</p> <p>21 questions, he'll be happy to respond.</p> <p>22 MR. ZELLERS: Your job is not</p> <p>23 to coach the witness; your job is to</p> <p>24 make objections as to form or</p>
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<p>1 Q. All right. This is a paper in</p> <p>2 2011. We'll mark it as Exhibit 18.</p> <p>3 (Carson Deposition Exhibit 18</p> <p>4 marked.)</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Here the authors also looked at</p> <p>7 the issue of occupational exposure to</p> <p>8 asbestos and ovarian cancer; is that right?</p> <p>9 A. Yes.</p> <p>10 Q. If you turn to page 216 -- I'm</p> <p>11 sorry, 1216, second-to-last paragraph before</p> <p>12 the conclusion: A further limitation of our</p> <p>13 analysis was its inability to account for</p> <p>14 nonoccupational risk factors for ovarian</p> <p>15 cancer other than age.</p> <p>16 Is that identified by the</p> <p>17 authors as a limitation?</p> <p>18 A. Yes, it is.</p> <p>19 Q. Under -- if you go a page back,</p> <p>20 1215, under Discussion, in the second</p> <p>21 paragraph, the authors talk about other</p> <p>22 studies that have been done in this area,</p> <p>23 including Edelman; is that right?</p> <p>24 MS. O'DELL: If you need to</p>	<p>1 foundation, not to make speaking</p> <p>2 objections and coaching of the</p> <p>3 witness.</p> <p>4 MS. O'DELL: If you have a</p> <p>5 question, I'm sure Dr. Carson would be</p> <p>6 happy to address it.</p> <p>7 MR. ZELLERS: I've asked him</p> <p>8 the question.</p> <p>9 MS. O'DELL: Would you mind</p> <p>10 repeating the question, please?</p> <p>11 MR. ZELLERS: Sure.</p> <p>12 THE WITNESS: I don't remember</p> <p>13 the question.</p> <p>14 MR. ZELLERS: Okay. I'll be</p> <p>15 happy to repeat it.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Dr. Carson, you've looked at</p> <p>18 this Camargo paper; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. In their discussion, they talk</p> <p>21 about other research, including research done</p> <p>22 by Edelman; is that right?</p> <p>23 A. Are you at the top of the</p> <p>24 middle column on --</p>

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<p style="text-align: right;">Page 166</p> <p>1 Q. I'm looking under Discussion.</p> <p>2 A. Yes.</p> <p>3 Q. The first -- well, the second</p> <p>4 paragraph.</p> <p>5 A. Second paragraph, yes.</p> <p>6 Q. The magnitude of the pooled</p> <p>7 estimate is similar to that reported by</p> <p>8 Edelman; is that right?</p> <p>9 A. Correct. Correct.</p> <p>10 Q. Then they state: They</p> <p>11 concluded, however, that despite the positive</p> <p>12 and significant association, there was</p> <p>13 insufficient information to infer that</p> <p>14 ovarian cancers were caused by occupational</p> <p>15 exposure to asbestos because of concerns</p> <p>16 about tumor misclassification, inappropriate</p> <p>17 comparison populations and the failure to</p> <p>18 take into account for known risk factors.</p> <p>19 Did I read that --</p> <p>20 A. You read that correctly.</p> <p>21 Q. All right. Are women who use</p> <p>22 talc perineally at greater risk of</p> <p>23 mesothelioma?</p> <p>24 A. I can't say that they are, but</p>	<p style="text-align: right;">Page 168</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. -- if your theory is correct?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. There may have been higher</p> <p>6 rates of ovarian cancers, but you have to</p> <p>7 also understand that the latency period for</p> <p>8 ovarian cancer is pretty long. It's greater</p> <p>9 than 20 years, often as long as 40 years.</p> <p>10 And so we're still dealing with cancers that</p> <p>11 may have started back in the '70s.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Would you agree that exposure</p> <p>14 to asbestos through a perineal cosmetic talc</p> <p>15 use is different from the heavy occupational</p> <p>16 exposure that has primarily been researched?</p> <p>17 MS. O'DELL: Objection to form.</p> <p>18 A. Yes. I agree with that.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Are you an expert and</p> <p>21 knowledgeable about cleavage fragments?</p> <p>22 A. I'm not.</p> <p>23 Q. If I went through a series of</p> <p>24 questions and asked you to differentiate</p>
<p style="text-align: right;">Page 167</p> <p>1 they may be.</p> <p>2 Q. Wouldn't you expect to find</p> <p>3 higher rates of other cancers in women using</p> <p>4 talc like mesothelioma if they are being</p> <p>5 exposed to substantial amounts of asbestos?</p> <p>6 A. Well, we may -- we may be</p> <p>7 seeing some mesotheliomas that are</p> <p>8 misclassified as ovarian cancers, or we may</p> <p>9 be seeing mesotheliomas and not relating talc</p> <p>10 application as a pertinent contributor to</p> <p>11 that case.</p> <p>12 Q. You told us earlier that you</p> <p>13 thought that there may have been more</p> <p>14 asbestos in talcum powders in the 1970s; is</p> <p>15 that right?</p> <p>16 MS. O'DELL: Objection to form.</p> <p>17 A. I think I said there have been</p> <p>18 step-wise improvements, and I -- but I agree</p> <p>19 with that statement.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Shouldn't we have seen higher</p> <p>22 rates of ovarian cancer in the earlier</p> <p>23 studies --</p> <p>24 MS. O'DELL: Object --</p>	<p style="text-align: right;">Page 169</p> <p>1 between cleavage fragments and asbestos</p> <p>2 fibers, you would defer that to other</p> <p>3 experts?</p> <p>4 A. I would.</p> <p>5 Q. You also claim that the</p> <p>6 presence of carcinogenic metals, including</p> <p>7 chromium, cobalt and nickel in talc, adds to</p> <p>8 its carcinogenicity; is that right?</p> <p>9 A. That is right.</p> <p>10 Q. Do you have an opinion or</p> <p>11 knowledge as to the amounts of chromium,</p> <p>12 cobalt and nickel, if any, in talc?</p> <p>13 A. Those metal elements are</p> <p>14 included as -- usually as impurities or in</p> <p>15 very small quantities in some deposits and</p> <p>16 are present in small amounts.</p> <p>17 Q. Do you have any idea how much</p> <p>18 of these metals, if any, reaches a woman's</p> <p>19 ovaries each time they use talc?</p> <p>20 A. I can't tell you how much, but</p> <p>21 I can tell you that some does, and it is --</p> <p>22 it remains in the talc until long after it</p> <p>23 reaches the ovaries.</p> <p>24 Q. Chromium, cobalt and nickel are</p>

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<p>1 natural elements; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. They are naturally in our</p> <p>4 bodies; is that right?</p> <p>5 A. That's correct.</p> <p>6 Q. They are present in food,</p> <p>7 drinking water, bottled water, vitamins; is</p> <p>8 that right?</p> <p>9 A. To some extent.</p> <p>10 Q. Do you have any evidence that</p> <p>11 the blood or tissue levels of any trace heavy</p> <p>12 metals are higher in genital talc users</p> <p>13 compared to nonusers?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. I do not.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. As we discussed when we talked</p> <p>19 about asbestos, you cannot evaluate the</p> <p>20 potential effects of exposure to a substance</p> <p>21 without factoring in the amount of exposure;</p> <p>22 is that right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p>1 to chromium, cobalt or nickel or any other</p> <p>2 heavy metal; is that right?</p> <p>3 A. That is correct.</p> <p>4 Q. That answer to that question</p> <p>5 would be true if I asked you about the</p> <p>6 different fragrance chemicals, correct?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. Also true.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. You did a risk assessment in</p> <p>12 this matter; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. Do you agree that a complete</p> <p>15 and proper risk assessment involves four</p> <p>16 elements?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. Not necessarily.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Well, you have to identify a</p> <p>22 potential hazard; is that right?</p> <p>23 A. Yes.</p> <p>24 Q. You've got to do some type of</p>
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<p>1 A. It's useful to factor in the</p> <p>2 amount if the amount is known. If the amount</p> <p>3 is not known, it's not necessarily required</p> <p>4 to draw conclusions.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. In this case, you do not know</p> <p>7 the amount, be it chromium, cobalt and/or</p> <p>8 nickel; is that right?</p> <p>9 MS. O'DELL: Objection to the</p> <p>10 form.</p> <p>11 Excuse me. Dr. Carson, as you</p> <p>12 know, is not being offered as a</p> <p>13 case-specific expert, so that question</p> <p>14 sounds like a specific patient, and so</p> <p>15 I would -- that's my objection.</p> <p>16 A. I do not know the amount, but</p> <p>17 my opinion is that any within the</p> <p>18 microenvironment of the inflammatory process</p> <p>19 that is occurring due to talc sequestration</p> <p>20 is contributing to the carcinogenic</p> <p>21 potential.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. But you don't know for any</p> <p>24 individual plaintiff their level of exposure</p>	<p>1 dose-response assessment; is that right?</p> <p>2 A. Not necessarily.</p> <p>3 Q. You --</p> <p>4 MS. O'DELL: Excuse me. If you</p> <p>5 finished -- if you need to,</p> <p>6 Dr. Carson, if you're not finished.</p> <p>7 If you're finished, fine. Sorry.</p> <p>8 A. A qualitative risk assessment</p> <p>9 does not necessarily require a dose-response</p> <p>10 in order to reach valid conclusions.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. It is not necessary to do a</p> <p>13 dose-response assessment as part of a risk</p> <p>14 assessment. Is that your testimony under</p> <p>15 oath?</p> <p>16 A. It's not always necessary.</p> <p>17 Q. Was it necessary in this case?</p> <p>18 A. Well, I think there is an</p> <p>19 aspect of dose-response that was performed in</p> <p>20 the risk assessment process here.</p> <p>21 Q. What dose-response assessment</p> <p>22 did you make with respect to chromium, cobalt</p> <p>23 and nickel and any other heavy metal?</p> <p>24 A. There's no information</p>

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<p style="text-align: right;">Page 174</p> <p>1 available to do a dose-response estimate for</p> <p>2 those metals.</p> <p>3 Q. What information did you rely</p> <p>4 or use, if any, to make a dose-response</p> <p>5 assessment with respect to any fragrance</p> <p>6 chemicals?</p> <p>7 MS. O'DELL: Objection, form.</p> <p>8 A. There is no information</p> <p>9 available to do a dose-response estimate for</p> <p>10 the fragrances.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Did you do any type of exposure</p> <p>13 assessment in this case?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form, vague.</p> <p>16 A. I'm not sure exactly what</p> <p>17 you're -- what you're asking by exposure</p> <p>18 assessment.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Well, an exposure assessment is</p> <p>21 also part of a risk assessment; is that</p> <p>22 right?</p> <p>23 A. In this risk assessment, I</p> <p>24 considered studies that are reported in the</p>	<p style="text-align: right;">Page 176</p> <p>1 and the metals were there as the baseline</p> <p>2 component of the talc formation that they</p> <p>3 came from.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. You do not know the amounts of</p> <p>6 either the heavy metals or the fragrance</p> <p>7 chemicals in the talcum powder at issue in</p> <p>8 this case, correct?</p> <p>9 A. That's -- that's correct, I</p> <p>10 don't.</p> <p>11 Q. You do not know -- well, strike</p> <p>12 that. I'll withdraw that.</p> <p>13 You brought with you an IARC</p> <p>14 monograph; is that right?</p> <p>15 A. I have a couple of them.</p> <p>16 Q. All right.</p> <p>17 MS. O'DELL: Are we going to --</p> <p>18 are you going to move to --</p> <p>19 MR. ZELLERS: We can take a</p> <p>20 break if you'd like.</p> <p>21 MS. O'DELL: Yeah, it's been</p> <p>22 about an hour and a half.</p> <p>23 MR. ZELLERS: Sure.</p> <p>24 THE VIDEOGRAPHER: We're off</p>
<p style="text-align: right;">Page 175</p> <p>1 scientific and medical literature which have</p> <p>2 reported the assessment of exposure in these</p> <p>3 cases in various forms, and I considered</p> <p>4 those exposure assessments as being valid as</p> <p>5 reported and considered them as a whole.</p> <p>6 Q. Did you look at any exposure</p> <p>7 assessment specific to the alleged heavy</p> <p>8 metals contained in talcum powder?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. No, I did not.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Did you look at any exposure</p> <p>14 assessment with respect to any fragrance</p> <p>15 chemicals contained within talcum powder?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. With respect to the fragrance</p> <p>19 chemicals and the heavy metals, the only</p> <p>20 exposure assessment that I was able to do was</p> <p>21 verify that these things were present in</p> <p>22 materials.</p> <p>23 The fragrances are always</p> <p>24 present in whatever form they were added in,</p>	<p style="text-align: right;">Page 177</p> <p>1 the record 12:32, end of Tape 2.</p> <p>2 (Recess taken, 12:32 p.m. to</p> <p>3 1:38 p.m.)</p> <p>4 THE VIDEOGRAPHER: We're on the</p> <p>5 record, 1:38, beginning of Tape 3.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Dr. Carson, when we left, we</p> <p>8 were talking about the trace metals and</p> <p>9 fragrance chemicals in talcum powder,</p> <p>10 correct?</p> <p>11 A. Yes.</p> <p>12 Q. You do not know how much of</p> <p>13 these trace metals or fragrance chemicals</p> <p>14 reach the ovaries, correct?</p> <p>15 A. I don't know specifically how</p> <p>16 much reaches it, but if I know it's a</p> <p>17 component of the talc, and if I know the talc</p> <p>18 reaches it, then I know some of the metals</p> <p>19 and the fragrances reach it.</p> <p>20 Q. You don't know the component or</p> <p>21 the amount of either the trace metals or the</p> <p>22 fragrance chemicals in the baby powder,</p> <p>23 correct?</p> <p>24 A. That's correct.</p>

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<p>1 Q. You do not know the exposure of</p> <p>2 any of the women who are plaintiffs in this</p> <p>3 litigation to the talcum powder, correct?</p> <p>4 MS. O'DELL: Individual women?</p> <p>5 MR. ZELLERS: Yes, individual</p> <p>6 women.</p> <p>7 A. I don't, no.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. You brought with you an IARC</p> <p>10 monograph, and I think you've got several</p> <p>11 monographs that are on your literature list;</p> <p>12 is that right?</p> <p>13 A. That's correct.</p> <p>14 Q. Generally, IARC classifies</p> <p>15 chemicals and agents from Group 1,</p> <p>16 carcinogenic to humans, down to Group 4,</p> <p>17 probably not carcinogenic to humans; is that</p> <p>18 right?</p> <p>19 A. That's correct.</p> <p>20 Q. Does the classification of a</p> <p>21 substance as a known probable or possible</p> <p>22 carcinogen by IARC, and IARC is International</p> <p>23 Agency for Research on Cancer, or by the</p> <p>24 National Toxicology Program or the U.S.</p>	<p>1 BY MR. ZELLERS:</p> <p>2 Q. What -- would you agree that,</p> <p>3 in general, metals can differ in their</p> <p>4 toxicity and potential carcinogenicity based</p> <p>5 on their form?</p> <p>6 A. Yes.</p> <p>7 Q. Do you know the forms of</p> <p>8 chromium, nickel and cobalt detected in</p> <p>9 cosmetic talc?</p> <p>10 A. There's -- metal ions are</p> <p>11 usually incorporated in the mineral lattice,</p> <p>12 and so they are part of the magnesium</p> <p>13 silicate crystal.</p> <p>14 Q. I'm not sure if that answers my</p> <p>15 question, and if it does, I don't understand,</p> <p>16 so let me ask again.</p> <p>17 Do you know the forms, and by</p> <p>18 that I mean valence state, of chromium or</p> <p>19 nickel or cobalt that have been detected in</p> <p>20 cosmetic talc?</p> <p>21 A. Oh, the valence state?</p> <p>22 Q. Yes, sir.</p> <p>23 A. I don't know specifically, but</p> <p>24 that's dependent on the surrounding structure</p>
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<p>1 Environmental Protection Agency, mean that</p> <p>2 the substance can cause all types of cancers</p> <p>3 in humans by any exposure route?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. No.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. There are different cancers</p> <p>9 that may be associated with different</p> <p>10 chemicals or agents; is that right?</p> <p>11 A. And different routes of</p> <p>12 exposure.</p> <p>13 Q. You can have an agent that is a</p> <p>14 carcinogen or a probable or possible</p> <p>15 carcinogen for one type of cancer, but not</p> <p>16 for another type of cancer, correct?</p> <p>17 A. That's correct.</p> <p>18 Q. You can have an agent or a</p> <p>19 chemical that's a carcinogen for one route of</p> <p>20 exposure for a chemical or agent but is not</p> <p>21 carcinogenic for a different route of</p> <p>22 exposure, correct?</p> <p>23 MS. O'DELL: Objection to form.</p> <p>24 A. Yes.</p>	<p>1 that the metals are contained in, and metals</p> <p>2 can assume a different valence state</p> <p>3 depending on the redox environment.</p> <p>4 Q. You are not, at least in this</p> <p>5 litigation today, expressing any opinion as</p> <p>6 to the valence state of chromium that may be</p> <p>7 found in cosmetic talc, correct?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. No, I'm not.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Your second opinion is that the</p> <p>13 perineal use of talcum powder results in</p> <p>14 direct exposure to the ovaries either via</p> <p>15 inhalation or migration through the female</p> <p>16 reproductive tract; is that right?</p> <p>17 A. Well, it's primarily through</p> <p>18 the female reproductive tract. The</p> <p>19 inhalation exposure would be a secondary</p> <p>20 route.</p> <p>21 Q. Let me ask you a couple of</p> <p>22 questions about inhalation exposure.</p> <p>23 You do not cite any studies in</p> <p>24 the body of your report evidencing that</p>

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<p>1 talcum powder can reach the ovaries through 2 inhalation, correct? 3 MS. O'DELL: Object to the 4 form. 5 A. That is correct, although 6 there -- yes, that's correct. 7 BY MR. ZELLERS: 8 Q. You have never performed any 9 study yourself pertaining to whether inhaled 10 talc can migrate to the ovaries; is that 11 right? 12 A. I have not, although it has 13 been used as an explanation of how talc 14 particles might have reached the ovaries in 15 persons who did not have another form of 16 exposure. 17 Q. If inhalation is the exposure 18 path for talc, shouldn't the lungs bear more 19 of a burden? 20 A. Yes. 21 Q. Why, then, isn't there an 22 epidemic of mesothelioma in women who use 23 talcum powder? 24 A. Because the primary route is</p>	<p>1 A. The -- I'm sorry. The Heller 2 study was talc, which I didn't cite here. 3 Halme was a retrograde menstruation study via 4 the fallopian tubes, and Sjösten was starch 5 particles. 6 Q. The only study -- and this is 7 not one that you cited, but you've now 8 referred to that involved talc, was Heller; 9 is that right? 10 A. Well, it looked at -- it didn't 11 look at transport inasmuch as it looked at 12 the presence of talc particles in the ovaries 13 and found them with or without the history of 14 talc powder use. 15 Q. Heller looked at 24 patients; 16 is that right? 17 A. I don't know, but that sounds 18 about right. 19 Q. Half of them had a history of 20 using talc products, half did not? 21 MS. O'DELL: Object to form. 22 A. That's correct. 23 BY MR. ZELLERS: 24 Q. Heller found talc in the</p>
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<p>1 perineal via the reproductive tract. 2 Q. You discuss that on page 7 of 3 your report; is that right? 4 A. Yes. 5 Q. You cite a number of studies 6 for the proposition that talc can be 7 transported from the perineum to the upper 8 reproductive tract and body cavity; is that 9 right? 10 A. That's correct. 11 Q. None of the articles that you 12 cite actually looked at whether talc can 13 migrate from perineal application through the 14 fallopian tubes to the ovaries, did they? 15 A. Let me just refresh my memory 16 for a moment here. Egli was carbon black. 17 Venter was radioactive technetium labeled 18 albumin. Let me see. Blumenkrantz -- I have 19 my notes here. 20 Yeah, I can't remember what the 21 substance was in Blumenkrantz. Sjösten, 22 starch -- yeah, Blumenkrantz was retrograde 23 menstruation. Halme was talc. 24 Q. Which study was talc?</p>	<p>1 tissues of all 24 patients; is that right? 2 A. That is correct. 3 Q. I believe we covered this 4 before, but just to confirm: There are no 5 published articles that you're aware of that 6 show granulomas, fibrosis or adhesions 7 anywhere in the reproductive tract of a woman 8 as a result of external genital talc 9 application, correct? 10 MS. O'DELL: Object to the 11 form. 12 A. I believe that's the case, 13 although there have been granulomas found in 14 some cases of cancer where they reported 15 having used talc. 16 BY MR. ZELLERS: 17 Q. Of the cases or the studies you 18 cited here, Egli, that involved just three 19 women, correct? 20 A. That was just -- that was an 21 experimental study of the transport of carbon 22 particles. 23 Q. The women were in a lithotomy 24 position; is that right?</p>



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<p>1 A. That's correct.</p> <p>2 Q. And that means that they had</p> <p>3 their legs up in the air, correct?</p> <p>4 A. Correct.</p> <p>5 Q. Those conditions -- well,</p> <p>6 strike that.</p> <p>7 They were injected with</p> <p>8 oxytocin; is that right?</p> <p>9 A. It is.</p> <p>10 Q. That was to aid in the</p> <p>11 transport of the particles, correct?</p> <p>12 MS. O'DELL: Object to the</p> <p>13 form.</p> <p>14 A. I believe that was the author's</p> <p>15 theory.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Those are different</p> <p>18 circumstances or conditions from a woman who</p> <p>19 would apply a talc to her genital area</p> <p>20 standing up, correct?</p> <p>21 A. Well, they are, but I'm not</p> <p>22 sure that that position is really pertinent</p> <p>23 to the migration of particles through the</p> <p>24 reproductive tract.</p>	<p>1 of all these studies -- that they were using</p> <p>2 various particles that could be detected at</p> <p>3 the other end, and so this was an attempt to</p> <p>4 do an experimental study which would cause no</p> <p>5 harm that would give them an answer regarding</p> <p>6 transport through the reproductive tract.</p> <p>7 Q. In this study, particles were</p> <p>8 introduced into the reproductive tract, not</p> <p>9 externally; is that right?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. That is correct.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Women were given Pitocin to</p> <p>15 stimulate uterine contractions; is that</p> <p>16 right?</p> <p>17 A. That's the same as oxytocin.</p> <p>18 Q. And that's a yes, correct?</p> <p>19 A. Yes.</p> <p>20 Q. Again, as with the Egli study,</p> <p>21 the women were inverted in the Trendelenburg</p> <p>22 position with their head down, legs up when</p> <p>23 the particles were administered; is that</p> <p>24 right?</p>
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<p>1 Q. Is it your pos- -- is it your</p> <p>2 testimony that if a woman is in a lithotomy</p> <p>3 position with their legs up into the air,</p> <p>4 that that is comparable with respect to the</p> <p>5 migration of talc to a woman who's standing</p> <p>6 up and using it in her perineal region?</p> <p>7 A. It may be.</p> <p>8 Q. Are you an expert on that?</p> <p>9 A. I'm not.</p> <p>10 Q. The authors in Egli, they</p> <p>11 stated it was possible that the study</p> <p>12 observed false positives due to sample</p> <p>13 contamination because they failed to use</p> <p>14 liquid or filter blanks as negative controls,</p> <p>15 correct?</p> <p>16 A. I don't recall that, but that</p> <p>17 may be the case.</p> <p>18 Q. You refer to a study by Venter.</p> <p>19 That involved a radioactive particulate</p> <p>20 matter, correct?</p> <p>21 A. Yes.</p> <p>22 Q. Did not involve talc particles,</p> <p>23 correct?</p> <p>24 A. The point of the study was --</p>	<p>1 A. I believe so.</p> <p>2 Q. Is it possible that the</p> <p>3 radionuclides can leach from the particles?</p> <p>4 A. I don't know the answer to</p> <p>5 that, but it was radioactive technetium that</p> <p>6 was bound to albumin.</p> <p>7 Q. The Sjösten study that you</p> <p>8 cite, that did not use -- involve the</p> <p>9 perineal use of talc, but an exam with a</p> <p>10 force to the cervix; is that right?</p> <p>11 A. Excuse me. An exam with what?</p> <p>12 Q. So it involved an exam with</p> <p>13 force to the cervix?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. Well, this was -- this was done</p> <p>17 as an experimental study on women who were</p> <p>18 scheduled to get hysterectomies and they did</p> <p>19 it on some women one day prior to the</p> <p>20 hysterectomy and another group of women four</p> <p>21 days prior to the hysterectomy, and they used</p> <p>22 gloves that were powdered with starch and</p> <p>23 gloves that were not powdered with starch.</p> <p>24 And so they had what's called a</p>

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<p>1 Latin square design, and they were able at</p> <p>2 the point of the hysterectomy of taking</p> <p>3 samples of the fallopian tubes and washing</p> <p>4 them to determine whether or not particles</p> <p>5 were found in the tubes.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. What they actually found was</p> <p>8 that, whether the women were examined with</p> <p>9 gloves with the starch particles or not, they</p> <p>10 found starch particles in both, both groups,</p> <p>11 correct?</p> <p>12 A. It is true.</p> <p>13 Q. Tubal ligation, you refer to</p> <p>14 tubal ligation and use that or purport to say</p> <p>15 that that supports your migration theory,</p> <p>16 correct?</p> <p>17 A. It does.</p> <p>18 Q. Your testimony is that for</p> <p>19 patients who have had a tubal ligation, that</p> <p>20 they are at a lesser risk of the talc -- let</p> <p>21 me withdraw that.</p> <p>22 Explain to us very briefly why</p> <p>23 you believe that tubal ligation supports your</p> <p>24 migration theory.</p>	<p>1 Q. In fact, in Terry -- well, and</p> <p>2 let me mark it for you so you've got it in</p> <p>3 front of you.</p> <p>4 THE WITNESS: Okay. I'm going</p> <p>5 to move this binder for the time</p> <p>6 being, if you don't mind.</p> <p>7 MR. ZELLERS: Oh, yes, I'll</p> <p>8 hand you the articles that I refer to,</p> <p>9 but if you need it, just pull it out.</p> <p>10 THE WITNESS: Thank you.</p> <p>11 (Carson Deposition Exhibit 19</p> <p>12 marked.)</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Deposition Exhibit 19 is the</p> <p>15 2013 Terry meta-analysis that you referred to</p> <p>16 in your report; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. That's a pooled analysis of</p> <p>19 eight studies; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. This pooled analysis of</p> <p>22 eight studies relating to genital powder use</p> <p>23 and the risk of ovarian cancer shows no</p> <p>24 variation in the risk in talc users based on</p>
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<p>1 A. If the pathway of exposure of</p> <p>2 the ovaries that results in ovarian cancer is</p> <p>3 via the reproductive tract, then tubal</p> <p>4 ligation, which closes off the fallopian</p> <p>5 tubes, would interrupt that pathway and</p> <p>6 result in reduced exposure; therefore, you</p> <p>7 would expect a reduced incidence of cancer in</p> <p>8 those women.</p> <p>9 Q. In fact, though, that is not</p> <p>10 what has been reported or at least that has</p> <p>11 not been consistently reported in the</p> <p>12 studies; is that right?</p> <p>13 A. Well, it actually has been a</p> <p>14 positive factor in a number of the</p> <p>15 epidemiologic studies that have looked at the</p> <p>16 ovarian cancer incidence and have been able</p> <p>17 to include tubal ligation as a historical</p> <p>18 factor in their analysis.</p> <p>19 Q. Did you look at the Terry 2013</p> <p>20 meta-analysis?</p> <p>21 A. Yes.</p> <p>22 Q. You cite that in support of</p> <p>23 your positions in this case; is that right?</p> <p>24 A. I did.</p>	<p>1 whether they had a tubal ligation or</p> <p>2 hysterectomy; is that right?</p> <p>3 A. I think that's the conclusion</p> <p>4 of the authors here, but it's not the</p> <p>5 conclusion of the individual authors of the</p> <p>6 studies who did the original investigations.</p> <p>7 Q. Well, it is the conclusion of</p> <p>8 the authors based upon their meta-analysis of</p> <p>9 eight studies; is that right?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Let me just check that.</p> <p>13 (Document review.)</p> <p>14 A. Yes.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. If you look at pages 819,</p> <p>17 carried over to 820, I'm reading: Our</p> <p>18 finding of slightly attenuated associations</p> <p>19 following exclusion of women with powder</p> <p>20 exposure after tubal ligation or hysterectomy</p> <p>21 are not supportive of this hypothesis, but</p> <p>22 risk estimates in this subgroup analysis may</p> <p>23 have randomly differed from those including</p> <p>24 all women because of the reduction in sample</p>

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<p>1 size.</p> <p>2 Is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Essentially, looking at these</p> <p>5 eight studies in this meta-analysis, Terry</p> <p>6 did not find that exposure to genital powder</p> <p>7 applications that occurred before tubal</p> <p>8 ligation or hysterectomy made any substantive</p> <p>9 difference in the results; is that right?</p> <p>10 A. Yes, but the point is that the</p> <p>11 authors didn't find that it did not make a</p> <p>12 difference either. They -- they ended up</p> <p>13 with a study with reduced numbers that they</p> <p>14 couldn't make determinations about.</p> <p>15 Q. If, though, the migration</p> <p>16 theory is correct, you would expect that</p> <p>17 there would be a reduction in the incidence</p> <p>18 of ovarian cancer for women who have had a</p> <p>19 tubal ligation or hysterectomy; is that</p> <p>20 right?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. Yes, that is correct.</p> <p>24 ///</p>	<p>1 THE WITNESS: Thank you.</p> <p>2 MS. O'DELL: Thank you.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. This is also a study,</p> <p>5 Exhibit 20, Cramer 2016, that you cite as</p> <p>6 supportive of your opinions in this case,</p> <p>7 correct?</p> <p>8 A. Correct.</p> <p>9 Q. Cramer actually looked at</p> <p>10 whether or not there was any greater</p> <p>11 association of talc use and ovarian cancer</p> <p>12 and whether or not women who had a tubal</p> <p>13 ligation or hysterectomy had a reduced</p> <p>14 incidence of the disease; is that correct?</p> <p>15 A. Yes.</p> <p>16 Q. Turn to page 337, and then it</p> <p>17 carries over to 339. They're talking --</p> <p>18 they, being the authors -- of their results,</p> <p>19 and I'm reading just at the very bottom of</p> <p>20 337, carried over to 339: By test for</p> <p>21 interaction, column 3, the association was</p> <p>22 significantly greater for women who were</p> <p>23 African-American, had no personal history of</p> <p>24 breast cancer, had a tubal ligation or</p>
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<p>1 BY MR. ZELLERS:</p> <p>2 Q. And that was not found in the</p> <p>3 Terry meta-analysis that you cite; is that</p> <p>4 right?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. That is correct, but it was</p> <p>8 found in the baseline studies that were, in</p> <p>9 part, included in this meta-analysis.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Are you -- you also cite the</p> <p>12 Cramer study, 2016; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. I've got a few questions for</p> <p>15 you on the Cramer study, but let me just ask,</p> <p>16 since we're at this part right now.</p> <p>17 Do you have the Cramer study?</p> <p>18 I'll hand it to you.</p> <p>19 A. If you have a copy, I'd</p> <p>20 appreciate it.</p> <p>21 MR. ZELLERS: Sure. We'll mark</p> <p>22 the Cramer study as Exhibit 20.</p> <p>23 (Carson Deposition Exhibit 20</p> <p>24 marked.)</p>	<p>1 hysterectomy.</p> <p>2 Is that right?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. Beginning on page 337?</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Yes.</p> <p>8 A. I'm sorry, if you could --</p> <p>9 Q. Sure. At the very end of 337.</p> <p>10 A. Okay.</p> <p>11 Q. So they're looking at --</p> <p>12 A. Oh, by tests for interaction.</p> <p>13 Q. Yes.</p> <p>14 A. Yeah.</p> <p>15 Q. So if your migration theory is</p> <p>16 correct, you would expect there to be a lower</p> <p>17 incidence of ovarian cancer in women who have</p> <p>18 had a tubal ligation or hysterectomy,</p> <p>19 correct?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. That is correct.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. All right. Cramer finds by</p>

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<p>1 test for interaction the association was</p> <p>2 significantly greater for women who -- and</p> <p>3 then I'm skipping African-American, but I'm</p> <p>4 coming down to -- have a tubal ligation or</p> <p>5 hysterectomy.</p> <p>6 Is that correct?</p> <p>7 A. Yes.</p> <p>8 Q. All right. If talcum powder</p> <p>9 migrates from the perineal region to the</p> <p>10 ovaries, shouldn't exposure to -- exposure to</p> <p>11 talc be far greater in concentration in the</p> <p>12 rectal, vulvar, vaginal, cervical and uterine</p> <p>13 tissues which are closer to the area of</p> <p>14 initial exposure?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 A. Well, the acute exposure would</p> <p>17 be greater.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. You would expect because the</p> <p>20 acute exposure is greater, that there should</p> <p>21 be inflammation caused in these organs and</p> <p>22 areas, correct?</p> <p>23 A. No. The inflammation and</p> <p>24 oxidative stress is an ongoing process that</p>	<p>1 to talcum powder?</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 A. It doesn't -- it doesn't</p> <p>5 eliminate exposure, but it does remove</p> <p>6 residual exposure, as does sweating, other</p> <p>7 body secretions and so forth.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Are you aware of any studies</p> <p>10 that show inflammation or oxidative stress as</p> <p>11 a result of genital talc use in the rectal,</p> <p>12 vulvar, vaginal, cervical and uterine</p> <p>13 tissues?</p> <p>14 A. No, I'm not.</p> <p>15 Q. Under your theory or belief</p> <p>16 that talcum powder travels from the perineal</p> <p>17 region to the ovaries through the woman's</p> <p>18 reproductive tract, talcum powder must travel</p> <p>19 past the labia, through the vagina, through</p> <p>20 the cervix, and then to the uterus; is that</p> <p>21 right?</p> <p>22 A. That's correct.</p> <p>23 Q. And then the powder travels</p> <p>24 through the uterus and into the fallopian</p>
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<p>1 has to develop over time, and it occurs on a</p> <p>2 chronic basis in areas where foreign bodies</p> <p>3 locate and reside. And talc and talcum</p> <p>4 powder are examples of foreign bodies that</p> <p>5 have the right characteristics to cause</p> <p>6 chemotaxis in reactive oxygen species and</p> <p>7 oxidative status.</p> <p>8 Q. Well, in fact, there would be</p> <p>9 chronic exposure, so if we're dealing with,</p> <p>10 as you described in the very beginning, which</p> <p>11 you were asked, to look at the habitual use</p> <p>12 of talcum powder, that would create exposure</p> <p>13 on a chronic basis to the rectal area and</p> <p>14 tissues, vulvar, vaginal, cervical and</p> <p>15 uterine tissues; is that right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. I suspect if one doesn't bathe,</p> <p>19 that would be more of an issue, but most</p> <p>20 people bathe regularly as well.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. And bathing regularly</p> <p>23 eliminates any exposure in the rectal,</p> <p>24 vulvar, vaginal, cervical and uterine tissues</p>	<p>1 tubes to reach the ovaries; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. On what studies are you relying</p> <p>4 to say that talcum powder affects the body</p> <p>5 differently when it's applied to the perineal</p> <p>6 region and travels to the cervix compared to</p> <p>7 when it is applied directly to the cervix?</p> <p>8 A. I don't think --</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. -- there is much of a</p> <p>12 difference.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. You would expect there to be a</p> <p>15 comparable similar result whether talcum</p> <p>16 powder is applied directly to the cervix</p> <p>17 through the use of dusting of a diaphragm as</p> <p>18 there is to the use of talcum powder in the</p> <p>19 genital areas; is that right?</p> <p>20 A. That is correct. I think the</p> <p>21 two differ probably in terms of quantity very</p> <p>22 significantly. But other than that, they</p> <p>23 would be the same.</p> <p>24 Q. When applied to the perineal</p>

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<p>1 region, talcum powder would also be in close</p> <p>2 contact with a woman's urethra; is that</p> <p>3 right?</p> <p>4 A. Yes.</p> <p>5 Q. Substances, and in your view,</p> <p>6 talcum powder, are capable of traveling up</p> <p>7 the urethra; is that right?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. The urethra has a sphincter</p> <p>11 which prevents transport beyond that point.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Women get urinary tract</p> <p>14 infections when bacteria travels up the</p> <p>15 urethra; is that right?</p> <p>16 A. That's correct.</p> <p>17 Q. Studies, though, do not show an</p> <p>18 increase in bladder cancer with talcum powder</p> <p>19 use; is that right?</p> <p>20 A. I don't believe that talcum</p> <p>21 powder transports in any appreciable amount</p> <p>22 up the urethra into the bladder.</p> <p>23 Q. Studies do not show an increase</p> <p>24 in rectal cancer with talcum powder use, do</p>	<p>1 about to reconsider that?</p> <p>2 A. Because the chatter is that</p> <p>3 this is something that's on their radar</p> <p>4 screen currently.</p> <p>5 Q. What chatter are you aware of?</p> <p>6 And what is chatter?</p> <p>7 A. It's discussion among -- within</p> <p>8 the scientific and healthcare community of</p> <p>9 things that are on the drawing board for</p> <p>10 IARC.</p> <p>11 Q. Do you know whether or not</p> <p>12 IARC -- well, strike that.</p> <p>13 IARC has not changed its</p> <p>14 position that the migration theory and</p> <p>15 evidence for the migration theory is weak; is</p> <p>16 that right?</p> <p>17 MS. O'DELL: Object to the</p> <p>18 form.</p> <p>19 A. They have not changed their</p> <p>20 position that was published in the 2010</p> <p>21 monograph.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. All right. You have heard</p> <p>24 chatter that they may look at it again; is</p>
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<p>1 they?</p> <p>2 A. No.</p> <p>3 Q. Are you aware that that IARC --</p> <p>4 and you're familiar with IARC, right?</p> <p>5 A. Yes.</p> <p>6 Q. Are you aware that IARC rejects</p> <p>7 this migration theory and calls the evidence</p> <p>8 weak?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. The IARC has made that</p> <p>12 statement in their -- I think the 2006 review</p> <p>13 that resulted in their recent monograph, but</p> <p>14 I think they're about to reconsider that.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Well, they also have stated</p> <p>17 that in 2010; is that right?</p> <p>18 A. Well, that's the --</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. That's the monograph from the</p> <p>22 2006 review.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Why do you believe that they're</p>	<p>1 that right?</p> <p>2 A. Yes.</p> <p>3 Q. Other than this chatter, you're</p> <p>4 unaware of any other -- well, strike that.</p> <p>5 You're unaware of any change in</p> <p>6 IARC's position with respect to migration,</p> <p>7 correct?</p> <p>8 A. Well, an example of what I'm</p> <p>9 talking about is the Health Canada report,</p> <p>10 which has contradicted what is found in the</p> <p>11 IARC monograph and is more current and</p> <p>12 considers information that will probably go</p> <p>13 into the next IARC review.</p> <p>14 MR. ZELLERS: Move to strike as</p> <p>15 nonresponsive.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Does IARC review and rely on</p> <p>18 draft assessments in formulating their</p> <p>19 positions?</p> <p>20 A. IARC relies on primary studies.</p> <p>21 Q. Not draft assessments, correct?</p> <p>22 A. Well, the draft assessment that</p> <p>23 I guess you're referring to, the Health</p> <p>24 Canada draft assessment, is derived from</p>

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<p>1 primary studies, the same ones that will be</p> <p>2 considered by IARC.</p> <p>3 Q. All right. As of today, IARC's</p> <p>4 published position is that evidence of a</p> <p>5 migration theory of talcum powder migrating</p> <p>6 to the ovaries is weak, correct?</p> <p>7 A. Yes.</p> <p>8 Q. Have you conducted any tests or</p> <p>9 experiments with respect to your theory or</p> <p>10 position that talc migrates to the ovaries</p> <p>11 through the reproductive tract?</p> <p>12 A. No, I haven't.</p> <p>13 Q. How much talc actually reaches</p> <p>14 the ovaries in your opinion?</p> <p>15 A. I can't answer that question</p> <p>16 because the dose has not been quantified.</p> <p>17 Q. Does it only reach the ovaries</p> <p>18 during certain times?</p> <p>19 A. I don't believe so. I think</p> <p>20 there are many circumstances whereby that</p> <p>21 migration pathway is functional, and in my</p> <p>22 belief, the pathway from the perineum to the</p> <p>23 cervix is pretty much an open channel, and</p> <p>24 then it continues to be open pretty much all</p>	<p>1 is that right?</p> <p>2 A. That is correct.</p> <p>3 Q. You are not one of those</p> <p>4 physicians, correct?</p> <p>5 A. I don't claim to be a</p> <p>6 specialist in gynecology.</p> <p>7 Q. Your third opinion is that the</p> <p>8 ovaries lack an intrinsic elimination system;</p> <p>9 is that right?</p> <p>10 A. That's correct.</p> <p>11 Q. Is "intrinsic elimination</p> <p>12 system" a recognized term of art that's used</p> <p>13 by gynecologists?</p> <p>14 A. I don't think so. It was just</p> <p>15 the term I used to describe the situation.</p> <p>16 Q. Is "intrinsic elimination</p> <p>17 system" a term of art used by oncologists?</p> <p>18 A. The same answer.</p> <p>19 Q. Have you seen published studies</p> <p>20 that use that term?</p> <p>21 A. I don't know. I suspect I</p> <p>22 could have. It's apparently a small number</p> <p>23 of ways to describe that in a few words.</p> <p>24 Q. You do not cite to any studies</p>
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<p>1 the way into the pelvic cavity.</p> <p>2 Q. You are not a specialist in</p> <p>3 women's health issues, correct?</p> <p>4 MS. O'DELL: Object to the</p> <p>5 form.</p> <p>6 A. Well, I'm a doctor. I've</p> <p>7 examined a lot of women.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Are you --</p> <p>10 MS. O'DELL: Excuse me. Are</p> <p>11 you finished, sir?</p> <p>12 THE WITNESS: Yes, I'm</p> <p>13 finished.</p> <p>14 MS. O'DELL: Okay.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Are you an expert in the</p> <p>17 women's reproductive tract?</p> <p>18 A. I've taken it apart and put it</p> <p>19 back together again in medical school, and in</p> <p>20 other settings I've done OB/GYN rotations.</p> <p>21 I've participated in pelvic surgeries. I</p> <p>22 understand the anatomy.</p> <p>23 Q. There are physicians who are</p> <p>24 specialists in the female reproductive tract;</p>	<p>1 in the body of your report to support your</p> <p>2 theory that the ovaries do not have an</p> <p>3 intrinsic elimination system, correct?</p> <p>4 A. That's correct.</p> <p>5 Q. You have not conducted any</p> <p>6 tests to show that exposure to the ovaries to</p> <p>7 particulate matter, if any, is longer than</p> <p>8 exposure to other parts of the female</p> <p>9 anatomy; is that right?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I have not conducted any such</p> <p>13 tests.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Is the cervix more or less</p> <p>16 sensitive to the impact of foreign particles</p> <p>17 than the ovaries?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. I think that the important</p> <p>21 point is the residence time that exists, and</p> <p>22 the cervix is not presented with things for</p> <p>23 an extended time like the ovaries are in</p> <p>24 relation to things like talc. But it is</p>



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<p>1 sensitive.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. All right. Your fourth</p> <p>4 theory -- or strike that.</p> <p>5 Your fourth opinion is that the</p> <p>6 epidemiological studies show a positive</p> <p>7 relationship between regular perineal</p> <p>8 application of talcum powder and ovarian</p> <p>9 cancer; is that right?</p> <p>10 A. That's correct.</p> <p>11 Q. The studies that you reference</p> <p>12 in this opinion are referred to on pages 6</p> <p>13 and 7 of your report; is that right?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. Most of them, yes.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. You conclude that when</p> <p>19 confounding and bias are exhaustively</p> <p>20 considered -- and do you believe you've done</p> <p>21 that here?</p> <p>22 A. I am restating what authors of</p> <p>23 the primary studies have done. I'm</p> <p>24 evaluating the consistency of the evidence,</p>	<p>1 A. Yes.</p> <p>2 MS. O'DELL: Object to the</p> <p>3 form.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Are you familiar with the term</p> <p>6 "person-years" as it relates to</p> <p>7 epidemiological study?</p> <p>8 A. Yes, I am.</p> <p>9 Q. What is -- strike that.</p> <p>10 How are person-years</p> <p>11 calculated?</p> <p>12 A. They are calculated by -- in</p> <p>13 relation to an exposure or to an existing</p> <p>14 treatment, they're calculated by multiplying</p> <p>15 the duration of the treatment or exposure in</p> <p>16 years by the number of people being studied.</p> <p>17 And that -- the result is person-years.</p> <p>18 Q. Can you explain the difference</p> <p>19 between high-grade serous and low-grade</p> <p>20 serous cancer?</p> <p>21 A. High-grade serous cancer has</p> <p>22 a -- is less differentiated and has a greater</p> <p>23 propensity for metastasis and invasion.</p> <p>24 Q. Are you aware that the</p>
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<p>1 not the basic evidence itself.</p> <p>2 Q. The apparent cause and effect</p> <p>3 relationship between perineal talcum powder</p> <p>4 use and ovarian cancer amounts to about a 30%</p> <p>5 increased risk of ovarian cancer in talcum</p> <p>6 powder users.</p> <p>7 Is that your opinion in this</p> <p>8 case?</p> <p>9 A. It is.</p> <p>10 Q. And that is your opinion from</p> <p>11 reviewing the epidemiologic studies that you</p> <p>12 cite in your report?</p> <p>13 A. Yes.</p> <p>14 Q. When epidemiologists refer to</p> <p>15 the statistical power of a study, what are</p> <p>16 they referring to?</p> <p>17 A. Statistical power refers to the</p> <p>18 ability of a study design, if carried out, to</p> <p>19 detect a signal in the data of a particular</p> <p>20 magnitude.</p> <p>21 Q. In plain English, statistical</p> <p>22 power is the likelihood that a study will</p> <p>23 detect an effect when there is an effect to</p> <p>24 be detected; is that fair?</p>	<p>1 epidemiological literature shows that these</p> <p>2 are very different cancers?</p> <p>3 A. They behave quite differently,</p> <p>4 yes.</p> <p>5 Q. Do you know what publication</p> <p>6 bias is?</p> <p>7 A. Yes.</p> <p>8 Q. What is publication bias?</p> <p>9 A. Publication bias is the</p> <p>10 tendency to -- to spin a certain argument</p> <p>11 in -- in order to influence acceptance of</p> <p>12 publications.</p> <p>13 Q. Is that a recognized issue in</p> <p>14 the field of epidemiology, at least as you've</p> <p>15 observed?</p> <p>16 A. It's a -- it's not necessarily</p> <p>17 recognized in the field of epidemiology. It</p> <p>18 exists in all scientific endeavors.</p> <p>19 Q. Is it something that you and</p> <p>20 other physicians and experts and scientists</p> <p>21 need to be aware of?</p> <p>22 A. Yes. I think we're all exposed</p> <p>23 to the effects of that and warned about it as</p> <p>24 we go through our careers.</p>

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<p>1 Q. When I asked you early on what 2 your methodology was, you looked at the 3 published literature, you looked at some 4 websites I think that you told us about 5 earlier, and then you performed a risk 6 assessment and considered whether perineal 7 use of talc products poses a safety risk to 8 consumers; is that right? 9 MS. O'DELL: Object to the 10 form. 11 A. Well, that's a gross 12 oversimplification of the risk assessment 13 process that I performed. 14 The review of the literature, 15 which was based on the question that I was 16 asked to address, was a fairly exhaustive one 17 which incorporated a search for every 18 pertinent publication that was available and 19 included multiple languages. 20 It then was -- proceeded into a 21 distillation of the facts that were -- that 22 were claimed based on those individual 23 studies and investigations, and a comparison 24 of those, one with another, eventually</p>	<p>1 been published as well. And I felt that was 2 sufficient to be able to produce this report 3 that addressed the question I was asked. 4 Q. As you told us earlier, you 5 have never published a meta-analysis on any 6 topic; is that right? 7 A. That's correct. 8 Q. You cite to some of the 9 available studies on talcum powder use in 10 ovarian cancer, but not to all of the 11 studies, correct? 12 MS. O'DELL: Object to the 13 form. 14 A. That's true. 15 BY MR. ZELLERS: 16 Q. What was your reasoning for 17 focusing on certain studies and excluding 18 other studies? 19 A. The studies that I referenced 20 were those that had specific aspects that 21 directly influenced my report or my 22 conclusions or that I felt were illustrative 23 of comments I was making in the report, and 24 that's why they were referenced.</p>
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<p>1 considering them all as a whole to arrive at 2 conclusions that addressed the question. 3 BY MR. ZELLERS: 4 Q. That was your methodology; is 5 that right? 6 A. That is the methodology, yes. 7 Q. Did you consider the Bradford 8 Hill criteria or factors in reaching your 9 conclusions and opinions in this matter? 10 A. That's part of the methodology 11 which is outlined in my report. 12 Q. In analyzing the Bradford Hill 13 criteria, did you conduct a meta-analysis of 14 the available data to reach a conclusion 15 about the relative risk? 16 A. No, I did not. 17 Q. Why didn't you conduct a 18 meta-analysis for this case? 19 A. I did not have the time to do a 20 meta-analysis in this case, first of all. 21 Secondly, there have been a number of other 22 meta-analyses performed, and I had those 23 results available to me in addition to 24 various reviews of the literature that have</p>	<p>1 All of the studies may not have 2 risen to that -- the level of requiring being 3 referenced, but pretty much all the studies 4 are included in the literature that I 5 reviewed. 6 Q. You cite in the report the 7 studies that were favorable or supportive of 8 your opinions, correct? 9 A. Well, I cited a number of 10 studies, not all of which were favorable to 11 my overall opinions, at least not on the 12 surface. 13 Q. Did you cite all of the studies 14 that you believe in one way or another 15 support your opinions in this case? 16 A. I don't think so. 17 Q. You believe there are 18 additional studies that support your opinions 19 that you did not cite? 20 A. They're in the literature list. 21 Q. Did you cite the opinions that 22 refuted -- strike that. 23 Did you cite the studies that 24 refuted your opinions in this matter?</p>

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<p>1 A. I cited some studies that had</p> <p>2 opinions that -- or that had conclusions that</p> <p>3 did not necessarily agree with mine, but I</p> <p>4 don't think they refuted my conclusions.</p> <p>5 Q. Do you believe the standard for</p> <p>6 proving causation in the scientific</p> <p>7 literature is the same one that applies in</p> <p>8 this litigation?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. I don't know that.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. A document you brought here</p> <p>14 today was an FDA letter?</p> <p>15 A. Yeah, I think you marked it.</p> <p>16 Q. I did mark it. Why don't you</p> <p>17 see if you could find it so I can ask you a</p> <p>18 couple of questions about it.</p> <p>19 A. There it is. That one?</p> <p>20 Q. Yes. Exhibit 10 is an FDA</p> <p>21 letter dated April 1st of 2014 to a</p> <p>22 Dr. Epstein; is that right?</p> <p>23 A. Yes.</p> <p>24 Q. That is a document that you</p>	<p>1 more detail to be able to answer that</p> <p>2 specifically.</p> <p>3 Q. Well, essentially, based upon</p> <p>4 its analysis as of 2014, the FDA concluded</p> <p>5 that causation had not been established as</p> <p>6 between genital talcum powder use and ovarian</p> <p>7 cancer or an increased risk of ovarian</p> <p>8 cancer, correct?</p> <p>9 A. Well, it said that an updated</p> <p>10 review failed to identify any new compelling</p> <p>11 literature data or new scientific evidence.</p> <p>12 I don't think they indicate here that they</p> <p>13 actually did a standard review of that</p> <p>14 literature.</p> <p>15 Q. Well, take a look, if you will,</p> <p>16 at page 4. The FDA sets forth its</p> <p>17 epidemiology and etiology findings; is that</p> <p>18 right?</p> <p>19 A. Yes.</p> <p>20 Q. The FDA has a number of very</p> <p>21 capable physicians, scientists,</p> <p>22 toxicologists, pharmacologists and medical</p> <p>23 professionals; is that right?</p> <p>24 MS. O'DELL: Object to the</p>
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<p>1 reviewed and considered as part of your</p> <p>2 analysis of this case; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Do you believe that that</p> <p>5 exhibit, Exhibit 10, is supportive of your</p> <p>6 opinions in this matter?</p> <p>7 A. I don't think it's very</p> <p>8 supportive. It's -- it's in response to a</p> <p>9 proposal from a citizens voluntary agency to</p> <p>10 provide more stringent labeling on talcum</p> <p>11 powder products, and the agency rejected</p> <p>12 the -- that petition.</p> <p>13 Q. The FDA is the regulatory body</p> <p>14 in the United States that oversees food, drug</p> <p>15 and cosmetics; is that right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. Yes.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. This letter -- strike that.</p> <p>21 In this letter the FDA goes</p> <p>22 through and analyzes some of the Bradford</p> <p>23 Hill factors; is that right?</p> <p>24 A. I'd have to look at this in</p>	<p>1 form.</p> <p>2 A. I don't know if they're still</p> <p>3 working, but they have good people on staff.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. And just so, a year or two or</p> <p>6 three, if this transcript is ever reviewed,</p> <p>7 we are in the midst of a shutdown of at least</p> <p>8 portions of the government; is that right?</p> <p>9 A. That's correct.</p> <p>10 Q. And that is what your comment</p> <p>11 was directed to, correct?</p> <p>12 A. That is correct.</p> <p>13 Q. On page 4 the FDA states:</p> <p>14 After consideration of the scientific</p> <p>15 literature submitted in support of both</p> <p>16 citizens' petitions, FDA found.</p> <p>17 And then, number 2, that</p> <p>18 several of the studies acknowledge biases in</p> <p>19 the study design and no single study has</p> <p>20 considered all the factors that potentially</p> <p>21 contribute to ovarian cancer, including</p> <p>22 selection bias and/or uncontrolled</p> <p>23 confounding that result in spurious positive</p> <p>24 associations between talc use and ovarian</p>

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<p>1 cancer risk.</p> <p>2 Did I read that correctly?</p> <p>3 A. You did read it correctly.</p> <p>4 Q. Does that appear to be at least</p> <p>5 one of the conclusions of the FDA after</p> <p>6 considering the scientific literature as of</p> <p>7 early 2014?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. Yes, that is listed as an FDI</p> <p>11 finding -- FDA finding.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. The FDA noted that a</p> <p>14 dose-response -- strike that.</p> <p>15 The FDA noted that</p> <p>16 dose-response evidence is lacking; is that</p> <p>17 right?</p> <p>18 A. A dose-response --</p> <p>19 Q. Two things. The FDA notes that</p> <p>20 there's a lack of consistency in the study</p> <p>21 results, correct?</p> <p>22 MS. O'DELL: Where are you</p> <p>23 reading? I'm sorry.</p> <p>24 MR. ZELLERS: I'm looking at</p>	<p>1 form.</p> <p>2 A. That is correct.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. You are a paid expert for the</p> <p>5 plaintiffs in this litigation; is that right?</p> <p>6 A. That is correct.</p> <p>7 Q. To your knowledge, the FDA is</p> <p>8 not paid -- well, let me withdraw that.</p> <p>9 A. I wouldn't go out on a limb</p> <p>10 there.</p> <p>11 Q. Number 4, Conclusion 4, a</p> <p>12 cogent biological mechanism by which talc</p> <p>13 might lead to ovarian cancer is lacking.</p> <p>14 Exposure to talc does not account for all</p> <p>15 cases of ovarian cancer and there was no</p> <p>16 scientific consensus on the proportion of</p> <p>17 ovarian cancer cases that may be caused by</p> <p>18 talc exposure.</p> <p>19 Was that a conclusion of the</p> <p>20 FDA based upon its review of the</p> <p>21 epidemiologic literature?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. Yes, it was, and it's one that</p>
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<p>1 Conclusion 3.</p> <p>2 THE WITNESS: Point 3.</p> <p>3 A. They found that the</p> <p>4 case-control studies did not demonstrate a</p> <p>5 consistent positive association across</p> <p>6 studies; although some studies have found</p> <p>7 small positive associations between talc and</p> <p>8 ovarian cancer, but lower confidence limits</p> <p>9 are often close to 1, and dose-response</p> <p>10 evidence is lacking.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. That was FDA's conclusion</p> <p>13 number 3 based upon its review of the</p> <p>14 scientific literature; is that right?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. It's correct. It's not a valid</p> <p>18 interpretation of the statistical results,</p> <p>19 but that was one of their findings.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Well, that was their finding.</p> <p>22 You disagree at least in part with their</p> <p>23 finding; is that right?</p> <p>24 MS. O'DELL: Object to the</p>	<p>1 I also disagree with.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. IARC also considered the</p> <p>4 Bradford Hill considerations; is that right?</p> <p>5 A. Yes, it did.</p> <p>6 Q. IARC rejected classification of</p> <p>7 talc as a carcinogenic, instead assigning it</p> <p>8 to the classification of possibly</p> <p>9 carcinogenic to humans; is that correct?</p> <p>10 A. That's correct.</p> <p>11 Q. We've already discussed the</p> <p>12 IARC categories briefly, but let's mark a</p> <p>13 document from the IARC website as to the</p> <p>14 classifications, Exhibit 21.</p> <p>15 (Carson Deposition Exhibit 21</p> <p>16 marked.)</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Tell me if you recognize that.</p> <p>19 A. Yes.</p> <p>20 Q. Exhibit 21 is from the IARC</p> <p>21 website, and it goes through the</p> <p>22 classifications of different agents that have</p> <p>23 been made by the International Agency for</p> <p>24 Research on Cancer; is that right?</p>

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<p>1 A. Yes, that's correct.</p> <p>2 Q. It has studied and included 120</p> <p>3 agents in the Group 1 category, which is</p> <p>4 carcinogenic to humans, correct?</p> <p>5 A. That's correct.</p> <p>6 Q. That's the only category in</p> <p>7 which IARC finds sufficient evidence in</p> <p>8 humans, correct?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. That's the category that</p> <p>12 represents substances for which there is</p> <p>13 sufficient and irrefutable evidence of human</p> <p>14 carcinogenesis.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. It lists 82 agents in Group 2A</p> <p>17 as being probably carcinogenic to humans; is</p> <p>18 that right?</p> <p>19 A. That's correct.</p> <p>20 Q. IARC is certainly willing to</p> <p>21 declare agents as either a known or probable</p> <p>22 carcinogen; is that right?</p> <p>23 A. That's correct.</p> <p>24 Q. There is only one agent in</p>	<p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I think limited evidence also</p> <p>4 refers to just the number of studies that</p> <p>5 have been performed as well as the quality of</p> <p>6 the studies.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. Well, based upon the evidence</p> <p>9 that is available, the studies that are</p> <p>10 available, a 2B designation by IARC means</p> <p>11 that IARC cannot rule out chance, bias or</p> <p>12 confounding with reasonable confidence,</p> <p>13 correct?</p> <p>14 MS. O'DELL: Objection, asked</p> <p>15 and answered.</p> <p>16 A. Not always the case.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. That's part of the definition,</p> <p>19 isn't it?</p> <p>20 A. I don't believe it applies to</p> <p>21 every agent or every evaluation.</p> <p>22 Q. Well, I'll not take the time to</p> <p>23 go through the IARC definitions; if we at the</p> <p>24 end of the day have extra time, we'll go back</p>
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<p>1 Group 4, probably not carcinogenic to humans,</p> <p>2 correct?</p> <p>3 A. Yes. I thought that number had</p> <p>4 gone up recently, but the date here is</p> <p>5 November 2018, so some may have been moved</p> <p>6 back into Group 3.</p> <p>7 Q. So out of the over 1,000 agents</p> <p>8 that IARC has reviewed, it's only placed one</p> <p>9 agent in the Group 4 category, probably not</p> <p>10 carcinogenic; is that right?</p> <p>11 A. That's correct.</p> <p>12 Q. There is no Group 5, not</p> <p>13 carcinogenic; is that right?</p> <p>14 A. That's correct.</p> <p>15 Q. With genital talc, IARC</p> <p>16 Group 2B designation -- well, strike that.</p> <p>17 Genital talc is listed as an</p> <p>18 IARC Group 2B designated substance; is that</p> <p>19 right?</p> <p>20 A. That's correct.</p> <p>21 Q. That's based on limited</p> <p>22 evidence in humans, which means that IARC</p> <p>23 cannot rule out chance, bias or confounding</p> <p>24 with reasonable confidence, correct?</p>	<p>1 and we'll take a look.</p> <p>2 What else is in the Class 2B,</p> <p>3 possibly carcinogenic. Ginkgo biloba, is</p> <p>4 that something you're aware of that's in that</p> <p>5 category?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. That's a biological material.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Pickled vegetables?</p> <p>11 A. That may be in Group 2B.</p> <p>12 Q. Occupational carpentry and</p> <p>13 joinery?</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 A. That's wood dust exposure.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Also 2B; is that right?</p> <p>18 A. Wood dust itself is Group 1.</p> <p>19 The occupation is Group 2B.</p> <p>20 Q. Let me ask you about some</p> <p>21 individual Bradford Hill criteria. On</p> <p>22 page 10 of your report, you state that you</p> <p>23 gave the most weight to strength of</p> <p>24 association, consistency and biologic</p>

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<p>1 plausibility; is that right?</p> <p>2 A. That's correct.</p> <p>3 Q. How much weight did you give to</p> <p>4 the other six factors?</p> <p>5 A. Sufficient.</p> <p>6 Q. Why did you put less weight on</p> <p>7 those?</p> <p>8 A. Because the strength of</p> <p>9 association, the consistency of the evidence</p> <p>10 and the biological plausibility of perineal</p> <p>11 talc, talcum powder application as</p> <p>12 responsible for the occurrence of ovarian</p> <p>13 cancer was compelling.</p> <p>14 Q. FDA focused on dose, correct?</p> <p>15 A. Yes.</p> <p>16 Q. You did not; is that right?</p> <p>17 A. That's right.</p> <p>18 Q. The first Bradford Hill factor</p> <p>19 that you focused on was strength of</p> <p>20 association.</p> <p>21 What association does the</p> <p>22 literature report between talc use and</p> <p>23 ovarian cancer?</p> <p>24 A. Overall, evaluating the</p>	<p>1 been failed attempts, but they have been</p> <p>2 attempts to estimate the quantity of powder</p> <p>3 that you start with and the amount that</p> <p>4 results in the application to the perineum by</p> <p>5 using models and actually doing some</p> <p>6 measurements and recording activities.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. You did not do any modeling or</p> <p>9 any assessment of the quantity of baby powder</p> <p>10 that was involved with daily use; is that</p> <p>11 right?</p> <p>12 A. No, I relied on those others.</p> <p>13 Q. When you say 30% increased</p> <p>14 risk, that's a 1.3 odds ratio; is that right?</p> <p>15 A. That's correct.</p> <p>16 Q. And that comes largely from the</p> <p>17 case-control studies, correct?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Yes, but it's also consistent</p> <p>21 with some of the information from the cohort</p> <p>22 studies.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Epidemiologists consider a 1.3</p>
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<p>1 universe of research, epidemiologic research</p> <p>2 that's been done on this, it shows an average</p> <p>3 30% increase in ovarian cancer risk for those</p> <p>4 who regularly apply talcum powder to the</p> <p>5 perineum.</p> <p>6 Q. Regular application of talcum</p> <p>7 powder means what?</p> <p>8 A. It -- I believe that it means</p> <p>9 daily or thereabouts.</p> <p>10 Q. In what form of application?</p> <p>11 A. Talcum powder.</p> <p>12 Q. In what amount?</p> <p>13 A. Whatever is necessary or</p> <p>14 desired by the user.</p> <p>15 Q. Does that vary from woman to</p> <p>16 woman?</p> <p>17 A. It does.</p> <p>18 Q. Did you make any attempt to</p> <p>19 assess what regular use of talcum powder was?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. There have been a couple of</p> <p>23 attempts to try to quantify what -- what that</p> <p>24 means. I think for the most part they've</p>	<p>1 odds ratio in a case-control study to be a</p> <p>2 weak or modest association; is that right?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. That's correct.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Where here we're talking only</p> <p>8 about statistical associations, not</p> <p>9 causation, correct?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Well, association eventually</p> <p>13 becomes causation when the -- when the</p> <p>14 evidence mounts to a point where it becomes</p> <p>15 recognized by all of the players that this is</p> <p>16 what's going on.</p> <p>17 A 30% increase may be</p> <p>18 classified by epidemiologists as weak or</p> <p>19 modest, but if you look at the number of</p> <p>20 women in this country who die each year from</p> <p>21 this fatal disease, that represents about</p> <p>22 3,000 lives that could potentially be saved</p> <p>23 through prevention.</p> <p>24 Q. There is not a --</p>



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<p>1 MS. BOCKUS: Excuse me, I need 2 to object as nonresponsive. 3 MR. ZELLERS: Yes, join. 4 BY MR. ZELLERS: 5 Q. There is not a consensus at 6 this time with respect to any causation 7 relating to genital talc and ovarian cancer, 8 is there? 9 MS. O'DELL: Objection to the 10 form. 11 A. I believe that that consensus 12 is building. 13 BY MR. ZELLERS: 14 Q. FDA -- that's not FDA's 15 position, correct? 16 MS. O'DELL: Object to the 17 form. 18 A. Not at the moment. 19 BY MR. ZELLERS: 20 Q. That's not the position of the 21 National Cancer Institute; is that right? 22 A. That's correct. 23 Q. That's not the position of the 24 CDC; is that correct?</p>	<p>1 epidemiologists are concerned, correct? 2 MS. O'DELL: Object to -- 3 object to the form. 4 A. It's an increased risk that 5 translates into human lives, so it depends on 6 your point of view. 7 MS. BOCKUS: Object to form -- 8 I mean, sorry, nonresponsive, move to 9 strike. 10 MR. ZELLERS: Join. 11 MS. O'DELL: Oppose. 12 DR. THOMPSON: Agreed. 13 BY MR. ZELLERS: 14 Q. The 1.3 relative risk that you 15 believe generally applies, that would relate 16 to epithelial cancers; is that right? 17 A. Yes. 18 Q. That's what you're limiting 19 your opinions to in this case, correct? 20 MS. O'DELL: Object to the 21 form. 22 A. Well, these opinions relate to 23 several of the cancers that have shown 24 increases in these background epidemiologic</p>
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<p>1 A. That's correct. 2 Q. IARC does not refer to any 3 association between perineal talc use and 4 ovarian cancer as a strong association, does 5 it? 6 MS. O'DELL: Object to the 7 form. 8 A. It calls it a Group 2B 9 carcinogen, which is fairly significant. 10 BY MR. ZELLERS: 11 Q. Well, we discussed a few 12 minutes ago that if an agent is a Group 2B 13 carcinogen, that is based on limited evidence 14 in humans; is that right? 15 A. That's correct. 16 Q. All right. Your opinions on 17 strength of association, do they apply 18 equally to all forms of ovarian cancer? 19 A. No, they don't. These apply to 20 the epithelial ovarian cancer spectrum. 21 Q. Your opinions in terms of there 22 being a -- well, let me withdraw that. 23 We've agreed that 1.3 is not a 24 strong association, at least insofar as</p>	<p>1 studies, which include the epithelial ovarian 2 cancers, including the serous; the borderline 3 cancers are also showing increases in some of 4 the studies. So it's the group of those 5 cancers, yes. 6 BY MR. ZELLERS: 7 Q. The cohort studies, prospective 8 cohort studies, have not shown an association 9 between talc and ovarian cancer, correct? 10 MS. O'DELL: Object to the 11 form. 12 A. They have in some subtypes. 13 BY MR. ZELLERS: 14 Q. There was an initial 15 description with respect to the first Nurses' 16 study that was not supported in the update of 17 that study; is that correct? 18 A. The Nurses' Health Study? 19 Q. Yes. 20 A. Yes, that's correct. 21 Q. Let's look at a different 22 criteria, consistency. The literature does 23 not show a consistent association between 24 talc use and ovarian cancer, correct?</p>

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<p>1 MS. O'DELL: Object to the</p> <p>2 form.</p> <p>3 A. I believe that, in fact,</p> <p>4 research shows -- does show a consistent</p> <p>5 pattern.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. The cohort studies do not show</p> <p>8 an association between talc use and ovarian</p> <p>9 cancer as we just discussed, correct?</p> <p>10 A. The basic cohort studies that</p> <p>11 look at all of the subjects and all of the</p> <p>12 cancers together typically do not rise to the</p> <p>13 level of significance.</p> <p>14 Q. The hospital-based case-control</p> <p>15 studies collectively do not show an</p> <p>16 association between talc use and ovarian</p> <p>17 cancer, correct?</p> <p>18 A. I sort of discount the</p> <p>19 distinction between the hospital-based</p> <p>20 studies and the community-based studies. I'm</p> <p>21 not sure whether there are valid reasons to</p> <p>22 consider those differently.</p> <p>23 Q. We've discussed earlier that</p> <p>24 you are not an epidemiologist; is that right?</p>	<p>1 ill patients in the community to healthy</p> <p>2 people in the community, correct?</p> <p>3 A. In some cases that might be</p> <p>4 correct, but I'm not sure that's any -- in</p> <p>5 any sort of world an advantage.</p> <p>6 Q. Well, shouldn't there be</p> <p>7 consistency if the Bradford Hill criteria is</p> <p>8 to be -- well, strike that.</p> <p>9 In applying the Bradford Hill</p> <p>10 criteria of consistency, there should be</p> <p>11 consistency across different types of</p> <p>12 studies, cohort studies, hospital-based</p> <p>13 case-control studies, and population-based</p> <p>14 case-control studies, correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. That's correct.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Isn't the absence of an</p> <p>20 association in the cohort studies especially</p> <p>21 significant in that the study design for the</p> <p>22 cohort studies reduces the likelihood of</p> <p>23 recall bias?</p> <p>24 A. There are many forms of bias</p>
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<p>1 MS. O'DELL: Object to the</p> <p>2 form, misstates his testimony.</p> <p>3 A. I don't think I necessarily</p> <p>4 agreed to that characterization because I</p> <p>5 deal a lot with epidemiologic work. I'm a</p> <p>6 faculty member in the Department of</p> <p>7 Epidemiology at the University of Texas</p> <p>8 School of Public Health, and some may</p> <p>9 consider me an epidemiologist.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Do you consider yourself an</p> <p>12 expert in epidemiology?</p> <p>13 A. No.</p> <p>14 Q. Do you agree -- well, do you</p> <p>15 agree that hospital-based case-control</p> <p>16 studies are less susceptible to selection</p> <p>17 bias than population-based case-control</p> <p>18 studies?</p> <p>19 A. It depends on the methodology</p> <p>20 that's used to recruit the study subjects.</p> <p>21 Q. With hospital-based</p> <p>22 case-controlled studies, you're more likely</p> <p>23 to be comparing hospitalized patients to</p> <p>24 hospitalized patients rather than comparing</p>	<p>1 that study designers need to consider in the</p> <p>2 process of designing a study, and there are</p> <p>3 even more types of bias that are discovered</p> <p>4 after a study has begun.</p> <p>5 You can fault case-control</p> <p>6 studies for being particularly sensitive to</p> <p>7 recall bias, but many of these authors who</p> <p>8 perform these studies indicated that they</p> <p>9 were well aware of that bias potential and</p> <p>10 took measures to avoid it.</p> <p>11 The same thing can be said</p> <p>12 about cohort studies. They suffer from other</p> <p>13 forms of bias, misclassification in</p> <p>14 particular. They may also suffer from the</p> <p>15 fact that they are extremely expensive, have</p> <p>16 long duration, and require very large numbers</p> <p>17 of subjects in order to carry them out and</p> <p>18 are frequently underpowered and unable to</p> <p>19 arrive at the conclusions that they seek for</p> <p>20 that reason.</p> <p>21 MR. ZELLERS: Move to strike as</p> <p>22 nonresponsive.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Is it possible that recall bias</p>

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<p>1 explains the difference between the cohort 2 studies and the retrospective case-control 3 studies? 4 MS. O'DELL: Object to form, 5 asked and answered. 6 A. I don't believe that that is 7 the case. 8 BY MR. ZELLERS: 9 Q. Is it possible? 10 MS. O'DELL: Objection. 11 A. Theoretically it would be 12 possible. 13 BY MR. ZELLERS: 14 Q. Are you familiar with the 15 Berge -- Berge 2017 study? 16 A. Yes. 17 Q. Is that a study that you cite 18 and reviewed and rely on? 19 A. It was a meta-analysis. 20 Q. Is that a meta-analysis that 21 you cite, review and have relied upon? 22 A. Yes. 23 Q. Take a look, if you will, at 24 Exhibit 22.</p>	<p>1 paragraph. Reading from the second full 2 paragraph, the authors discuss the fact that 3 the association between genital talc use and 4 risk of ovarian cancer is present in 5 case-control but not in cohort studies, can 6 be attributed to bias in the former type of 7 studies; is that right? 8 MS. O'DELL: Object to the 9 form. 10 A. That's what it says. 11 BY MR. ZELLERS: 12 Q. Then continuing down: 13 Information bias from retrospective 14 self-report of talc use is a possible 15 explanation for the association detected in 16 case-control studies. 17 Is that right? 18 A. That's what it says. 19 Q. What was your methodology for 20 discounting the effect of recall bias in the 21 population-based case-control studies? 22 A. The fact that several authors 23 discussed the possibility of recall bias and 24 incorporated methodology for avoiding recall</p>
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<p>1 (Carson Deposition Exhibit 22 2 marked.) 3 THE WITNESS: Thank you. 4 MS. O'DELL: Thank you. 5 BY MR. ZELLERS: 6 Q. You're familiar with this 7 meta-analysis; is that right? 8 A. Yes. 9 Q. The authors conclude that 10 information bias from retrospective 11 self-report of talc use is a possible 12 explanation for the association detected in 13 case-control studies; is that right? 14 MS. O'DELL: I'm sorry, are you 15 reading from a certain page? 16 MR. ZELLERS: I am. 17 MS. O'DELL: Can you direct it 18 to us, please? 19 THE WITNESS: Could you tell us 20 where that is? 21 MR. ZELLERS: Sure. 22 BY MR. ZELLERS: 23 Q. Take a look if you will on 24 page 6, the right-hand column, third</p>	<p>1 bias, for example, placing parallel questions 2 that should be affected in the same way, and 3 still showed a positive result for talc and 4 ovarian cancer is one reason. 5 The other has to do with 6 consistency of the results, and although 7 you've stated that from these various 8 documents, including this quotation, that the 9 case-control studies showed positive 10 associations but the cohort studies did not, 11 I would -- I would refute that by saying that 12 all of the -- the vast majority of all of the 13 studies show a positive odds ratio or 14 relative risk, even if they don't rise to the 15 level of significance. 16 If these results were obtained 17 simply by chance, you would expect an equal 18 number of positive results and negative 19 results, but we don't have that here. We 20 have practically all positive results with 21 three or four outliers. 22 And so -- 23 Q. We looked at the Taher paper 24 early on in this deposition where Taher</p>

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<p>1 concluded that 15 out of the 30 case-control 2 studies reported a statistically significant 3 association between genital talc use and 4 ovarian cancer, correct? 5 A. That's correct, but you're 6 not -- you're not talking about the other 15. 7 Q. The hospital-based case-control 8 studies collectively do not show a 9 statistically significant association between 10 talc use and ovarian cancer, correct? 11 MS. O'DELL: Object to the 12 form. 13 A. I don't know that that is the 14 case. 15 BY MR. ZELLERS: 16 Q. You don't know that it's not 17 the case; you'd have to go back and relook at 18 the studies, fair? 19 A. I'd have to look through here, 20 which I'm happy to do if you want me to, but 21 I don't believe that that's the case. 22 Q. In fact, the author, you cite 23 the Langseth paper, a 2008 paper, as 24 supportive of your position; is that right?</p>	<p>1 page. 2 MS. O'DELL: Object to the 3 form. 4 BY MR. ZELLERS: 5 Q. Is that the conclusion of the 6 authors? 7 A. What I'm reading here is on 8 balance, the epidemiological evidence 9 suggests that the use of cosmetic talc in the 10 perineal area may be associated with ovarian 11 cancer risk. The mechanism of 12 carcinogenicity may be related to 13 inflammation. 14 Q. Take a look at the paragraph on 15 the right-hand side under Proposal to 16 Research Community. I'm looking at the 17 second page of the Langseth article. 18 Are you there? 19 A. Yes, I am. 20 Q. The authors state: The current 21 body of experimental and epidemiological 22 evidence is insufficient to establish a 23 causal association between perineal use of 24 talc and ovarian cancer risk.</p>
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<p>1 A. Yes. 2 Q. I'll mark that 3 Deposition Exhibit 23. 4 A. I think it was 2004, was it 5 not? 6 Q. Well, I'm going to hand it to 7 you and we can look at it together. 8 (Carson Deposition Exhibit 23 9 marked.) 10 A. Okay. 11 BY MR. ZELLERS: 12 Q. You're familiar with the 13 Langseth paper; is that right? 14 A. Yes. 15 (Comments off the stenographic 16 record.) 17 BY MR. ZELLERS: 18 Q. Langseth and the authors 19 concluded that the current body of 20 experimental and epidemiological evidence is 21 insufficient to establish a causal 22 association between perineal use of talc and 23 ovarian cancer risk; is that right? 24 And I'm looking at the second</p>	<p>1 Is that right? 2 MS. O'DELL: Object to the 3 form. 4 A. That's what it says. 5 BY MR. ZELLERS: 6 Q. Experimental research is needed 7 to better characterize deposition, retention 8 and clearance of talc to evaluate the ovarian 9 carcinogenicity of talc. 10 Is that what the authors state? 11 A. Well, that's what it says, but 12 it says much more. In fact, the editors of 13 the journal, in the section on the next page 14 that is titled What This Study Adds, say: 15 Epidemiological evidence suggests that the 16 use of cosmetic talc in the perineal area may 17 be associated with ovarian cancer risk. The 18 IARC has classified this use of talc as 19 possibly carcinogenic to human beings, 20 Group 2B. The mechanism of carcinogenicity 21 may be related to inflammation. This paper 22 focused on the high degree of consistency in 23 the studies accomplished so far and what 24 should be the focus in future studies.</p>

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<p>1 So I --</p> <p>2 Q. And then the conclusion is what</p> <p>3 I read, that: The current body of</p> <p>4 experimental and epidemiological evidence is</p> <p>5 insufficient to establish a causal</p> <p>6 association between perineal use of talc and</p> <p>7 ovarian cancer risk.</p> <p>8 Correct?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. That is what it says, but this</p> <p>12 was accepted in 2007, which was now 12 years</p> <p>13 ago.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Let me ask you about the cohort</p> <p>16 studies. They involved a much greater number</p> <p>17 of women than the case-controlled studies; is</p> <p>18 that right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. Well, they did not involve more</p> <p>22 cases, but they involved more women because</p> <p>23 in order to do a cohort study, you have to</p> <p>24 start with a huge group of people and wait</p>	<p>1 doesn't happen.</p> <p>2 Q. Is it your testimony that the</p> <p>3 cohort studies relating to genital talc use</p> <p>4 and ovarian cancer are spinning the roulette</p> <p>5 wheel?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. In terms of the power of the</p> <p>9 studies to detect a meaningful difference</p> <p>10 among the subjects, yes.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. That's your testimony as an</p> <p>13 expert in this case; is that right?</p> <p>14 A. It is my testimony that cohort</p> <p>15 studies, including these, are chronic -- or</p> <p>16 quite often underpowered simply because of</p> <p>17 the expense associated with performing these</p> <p>18 studies.</p> <p>19 Q. What analysis did you do to</p> <p>20 conclude that the cohort studies in this</p> <p>21 area, the four cohort studies, are</p> <p>22 underpowered?</p> <p>23 A. Like I just mentioned to you, I</p> <p>24 read the studies and looked at their</p>
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<p>1 for them to develop cancers, and then count</p> <p>2 those cancers.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. What was your methodology for</p> <p>5 weighing the power of the cohort studies</p> <p>6 versus the case-control studies?</p> <p>7 A. The cohort studies, it wasn't</p> <p>8 apparent in every research report exactly how</p> <p>9 they had done their sample size calculations</p> <p>10 and power determinations, but in many cases</p> <p>11 the lack of arriving at conclusions was</p> <p>12 simply due to an inability to detect an</p> <p>13 effect in the cohort studies, not that they</p> <p>14 detected that there was not an effect. And</p> <p>15 that's unfortunately a disadvantage of an</p> <p>16 underpowered study.</p> <p>17 Q. Is it your testimony that the</p> <p>18 cohort studies are underpowered?</p> <p>19 A. I think by and large most</p> <p>20 cohort studies are underpowered and --</p> <p>21 because power calculations are based on</p> <p>22 chance. Investigators are sort of spinning</p> <p>23 the roulette wheel and hoping that the number</p> <p>24 that they want comes up. In some cases that</p>	<p>1 conclusions, and their conclusions were not</p> <p>2 that the effect didn't exist, but they</p> <p>3 couldn't detect it.</p> <p>4 MR. ZELLERS: Let's go off the</p> <p>5 record because we need to change our</p> <p>6 tape.</p> <p>7 THE VIDEOGRAPHER: We're off</p> <p>8 the record at 3:06, end of Tape 3.</p> <p>9 (Recess taken, 3:06 p.m. to</p> <p>10 3:19 p.m.)</p> <p>11 THE VIDEOGRAPHER: We're on the</p> <p>12 record at 3:19, beginning of Tape 4.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Dr. Carson, you are not a</p> <p>15 statistician, correct?</p> <p>16 A. That's correct.</p> <p>17 Q. You are not a biostatistician;</p> <p>18 is that right?</p> <p>19 A. That's right.</p> <p>20 Q. Do you agree that some of the</p> <p>21 case-control studies have shown statistically</p> <p>22 significant findings and others have not?</p> <p>23 A. I do agree that.</p> <p>24 Q. If a study does not show a</p>



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<p>1 statistically significant association, it 2 could mean that no risk exists, as we've 3 discussed; is that right? 4 A. That's correct. 5 Q. What methodology did you use to 6 weigh the lack of statistical significance 7 across studies? 8 MS. O'DELL: Object to the 9 form. 10 A. Across all of the case-control 11 studies? 12 BY MR. ZELLERS: 13 Q. Yes. 14 A. I simply treated them as 15 isolated research designs that were done on 16 different populations in different places 17 with different considerations. They were not 18 necessarily comparable, like apples to apples 19 or oranges to oranges; they were very 20 different studies in most cases, and so I 21 felt it was important to allow their findings 22 to stand on their own. 23 Q. I want to talk to you about 24 dose-response. That's another of the</p>	<p>1 front of you? 2 A. I do. 3 I would also add that the 4 Penninkilampi meta-analysis also found a 5 dose-response. 6 Q. Do you mention Penninkilampi at 7 all in your report? 8 A. It's cited. 9 Q. In the body of your report? 10 A. I think it's in there 11 somewhere. 12 Q. You believe it is; is that 13 right? 14 A. I do. 15 Q. Well, I'll ask you a couple of 16 questions about it then. 17 Before I do, let's talk a 18 little bit more about your report. So go to 19 page 7. You state at the very top of that 20 page that it has been difficult to estimate 21 dose in order to evaluate the dose-response 22 relationship for ovarian cancer; is that 23 right? 24 A. That's correct.</p>
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<p>1 Bradford Hill criteria; is that right? 2 A. That's correct. 3 Q. Which studies show a 4 dose-response, talc exposure and ovarian 5 cancer? 6 A. Let me see here. I'm looking 7 at my notes. The Harlow study from 1992 8 showed a dose-response, and the Cramer 2016 9 study showed a dose trend with strong odds 10 ratios for premenopausal women and hormone 11 therapy-treated women with greater than 12 24 years of exposure. 13 The Schildkraut study, also a 14 case-controlled study of 2016, showed a 15 dose-response. 16 Q. There are a number of studies 17 that did not show a dose-response; is that 18 right? 19 A. It's correct. They did not 20 necessarily show there was not a 21 dose-response. They just, as I was 22 mentioning before, were unable to detect a 23 dose-response. 24 Q. Do you have your report in</p>	<p>1 Q. You state that it also has been 2 difficult to exactly estimate the quantity of 3 talcum powder administration during personal 4 hygiene activities; is that right? 5 A. That's correct. 6 Q. Let's look at a couple of the 7 studies that you believe do, in fact, show a 8 dose-response. The Penninkilampi, that's a 9 meta-analysis, 2018; is that right? 10 A. That's correct. 11 Q. That study does not consider or 12 include the Gertic 2010 cohort study; is that 13 right? 14 A. I -- I'd have to look at the 15 table, but yes, that one may be left out. 16 Q. Well, that's a significant 17 study to leave out of an analysis, isn't it? 18 MS. O'DELL: Object to the 19 form. 20 THE WITNESS: I'm getting 21 there. 22 (Document review.) 23 THE WITNESS: Apologies, I have 24 binder block here.</p>

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<p style="text-align: right;">Page 258</p> <p>1 MS. O'DELL: You need help?</p> <p>2 THE WITNESS: Okay.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. And I misspoke. I meant to</p> <p>5 refer to Gates, the updated Nurses' study.</p> <p>6 So Gates 2010.</p> <p>7 A. Yes, it appears that Gates is</p> <p>8 not included in the -- in the spectrum of</p> <p>9 studies considering; the Gertic study does</p> <p>10 appear.</p> <p>11 Q. Gates 2010 is an important</p> <p>12 cohort study in this area, would you agree?</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. It's important, but I think it</p> <p>16 may be considered one of the ones that</p> <p>17 suffered from power issues. It wasn't able</p> <p>18 to determine a relative risk in the</p> <p>19 population that it assessed.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. There are a number of the</p> <p>22 case-control studies that did not determine a</p> <p>23 relative risk, at least of statistical</p> <p>24 significance, correct?</p>	<p style="text-align: right;">Page 260</p> <p>1 Q. This is my highlighted copy, so</p> <p>2 I'm sure it wasn't yours.</p> <p>3 A. I'm sorry.</p> <p>4 Q. That's all right. We'll --</p> <p>5 take your time.</p> <p>6 A. Here we are.</p> <p>7 Q. Got it, Exhibit 20?</p> <p>8 A. I think so.</p> <p>9 Q. Do you have the Cramer study in</p> <p>10 front of you?</p> <p>11 A. I do.</p> <p>12 Q. It's a retrospective</p> <p>13 case-control study published in 2016; is that</p> <p>14 right?</p> <p>15 A. That's correct.</p> <p>16 Q. If we look at the table of</p> <p>17 results on page 337, Table 1.</p> <p>18 Do you see that?</p> <p>19 A. Yes.</p> <p>20 Q. This table shows the risk of</p> <p>21 ovarian cancer for women who use talc, talcum</p> <p>22 powder, daily; is that right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>
<p style="text-align: right;">Page 259</p> <p>1 A. Well, they determined odds</p> <p>2 ratios, which is the equivalent of relative</p> <p>3 risk for a case-control study.</p> <p>4 Q. And in a number of those</p> <p>5 case-control studies, at least 15 out of the</p> <p>6 30 relative risk was not -- or strike that --</p> <p>7 statistical significance was not achieved in</p> <p>8 the study; is that right?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. That's correct.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Let's look at the Cramer paper.</p> <p>14 We've talked about this earlier.</p> <p>15 A. Which one, the 2016?</p> <p>16 Q. Exhibit 20, yes, 2016.</p> <p>17 A. Okay.</p> <p>18 Q. This is another study that you</p> <p>19 cite as being supportive of your</p> <p>20 dose-response opinion; is that right?</p> <p>21 A. Yes.</p> <p>22 Q. Tell me when you have it.</p> <p>23 A. I think you may have picked up</p> <p>24 my copy or the copy that I was looking at.</p>	<p style="text-align: right;">Page 261</p> <p>1 A. It does.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. And it's four different periods</p> <p>4 of time; one year, one to five years, five to</p> <p>5 20 years and more than 20 years; is that</p> <p>6 right?</p> <p>7 A. That's correct.</p> <p>8 Q. There was only statistical</p> <p>9 significance found for the time period of one</p> <p>10 to five years of use and more than 20 years</p> <p>11 of use; is that right?</p> <p>12 A. For the first group, the -- for</p> <p>13 those who reported months year of use --</p> <p>14 months per year of use.</p> <p>15 Q. Well, for the first group,</p> <p>16 which was equivalent to one year of daily</p> <p>17 use, there was no statistical significance;</p> <p>18 is that right?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. That -- well, the -- there was</p> <p>22 a positive odds ratio with a nonsignificant</p> <p>23 95% confidence interval.</p> <p>24 ///</p>

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<p>1 BY MR. ZELLERS:</p> <p>2 Q. Meaning that if you look at</p> <p>3 this study, that it is certainly possible</p> <p>4 that because there is not statistical</p> <p>5 significance, there could be a finding of no</p> <p>6 risk, correct, no increased risk?</p> <p>7 A. That's a possibility.</p> <p>8 Q. Then if we go to the next</p> <p>9 period, we do show a dose-response for talcum</p> <p>10 powder use in the year -- years one to five;</p> <p>11 is that right?</p> <p>12 A. Well, one to five years of</p> <p>13 daily use, yes.</p> <p>14 Q. But then when we look at five</p> <p>15 to 20 years of daily use, there is not a</p> <p>16 statistically significant association; is</p> <p>17 that right?</p> <p>18 A. That's correct.</p> <p>19 Q. But then when we go to greater</p> <p>20 than 20 years, we do find a statistical</p> <p>21 association; is that right?</p> <p>22 A. That's correct.</p> <p>23 Q. If, in fact, there was a true</p> <p>24 dose-response relationship, you would expect</p>	<p>1 dirty, and it doesn't always work out quite</p> <p>2 that cleanly.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. All right. Do you -- well, let</p> <p>5 me withdraw that.</p> <p>6 Confounding. You considered</p> <p>7 and talk about confounding as another one of</p> <p>8 the Bradford Hill criteria; is that right?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. Confounding, by that you mean</p> <p>12 specificity?</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Well, I thought your -- I</p> <p>15 thought you said in your methodology that you</p> <p>16 applied the Bradford Hill criteria.</p> <p>17 A. That's correct.</p> <p>18 Q. Is confound -- strike that.</p> <p>19 Is confounding an issue in</p> <p>20 interpreting epidemiologic studies?</p> <p>21 A. Yes.</p> <p>22 Q. Do you agree that there is</p> <p>23 confounding in these studies?</p> <p>24 A. I'm sure there's confounding in</p>
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<p>1 to see that dose-response relationship in</p> <p>2 each of these groups; is that right?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. It's more like we see in the</p> <p>6 group directly below that, where you start</p> <p>7 out with an odds ratio which is not</p> <p>8 significant but positive, and then reach a</p> <p>9 significant odds ratio at one to five years</p> <p>10 of daily use and a higher amount of</p> <p>11 significance with five to 20 years of daily</p> <p>12 use, and still a significant odds ratio,</p> <p>13 which is about the same level, at greater</p> <p>14 than 20 years of daily use.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Is that a yes to my question,</p> <p>17 that if you do have a true dose-response</p> <p>18 relationship, you would expect to see that</p> <p>19 dose-response continue throughout each of the</p> <p>20 periods?</p> <p>21 MS. O'DELL: Object to the</p> <p>22 form.</p> <p>23 A. Well, it would be nice if you</p> <p>24 did that, but epidemiologic data is very</p>	<p>1 these studies.</p> <p>2 Q. You're familiar with that term,</p> <p>3 right?</p> <p>4 A. Yes.</p> <p>5 Q. That's where the presence of</p> <p>6 another association confuses the relationship</p> <p>7 between the exposure and the disease being</p> <p>8 studied; is that right?</p> <p>9 A. That's correct.</p> <p>10 Q. For example, if you're studying</p> <p>11 the association between coffee and pancreatic</p> <p>12 cancer, you need to be mindful of whether</p> <p>13 cigarette smoking is more common in coffee</p> <p>14 drinkers than the rest of the population,</p> <p>15 fair?</p> <p>16 A. Yes.</p> <p>17 Q. Coffee -- or strike that.</p> <p>18 Cigarette smoking could be a</p> <p>19 confounder in that situation?</p> <p>20 A. Possible.</p> <p>21 Q. Because if more coffee drinkers</p> <p>22 are smokers than non-coffee drinkers, an</p> <p>23 association between coffee drinking and</p> <p>24 pancreatic cancer might be due to the</p>

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<p>1 smoking, not the coffee drinking; fair?</p> <p>2 A. That would be a good</p> <p>3 description of confounding.</p> <p>4 Q. Confounding can distort results</p> <p>5 in epidemiological studies; is that right?</p> <p>6 A. It can.</p> <p>7 Q. Do you agree that residual</p> <p>8 confounding is possible in every</p> <p>9 observational study?</p> <p>10 A. Yes, I think there's some form</p> <p>11 of confounding that's present in every</p> <p>12 observational study.</p> <p>13 Q. It's possible that unmeasured</p> <p>14 confounders may be present in every</p> <p>15 observational study; is that right?</p> <p>16 A. That's correct. Not just</p> <p>17 unmeasured confounders, but unrecognized</p> <p>18 confounders.</p> <p>19 Q. It's impossible to say that all</p> <p>20 known and unknown confounding factors have</p> <p>21 been controlled for in any given study; is</p> <p>22 that right?</p> <p>23 A. I also agree with that.</p> <p>24 Q. Many new factors possibly</p>	<p>1 not controlled for in any of the talc/ovarian</p> <p>2 cancer studies, were they?</p> <p>3 A. Not that I'm aware of.</p> <p>4 Q. Are you aware that studies that</p> <p>5 show a relationship between talc and ovarian</p> <p>6 cancer did not account for confounders?</p> <p>7 A. I think it's possible that many</p> <p>8 of those studies did not account for all</p> <p>9 potential confounders, but they made attempts</p> <p>10 to.</p> <p>11 Q. For example, Terry 2013, we</p> <p>12 talked about that earlier; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. Terry 2013, that meta-analysis</p> <p>15 did not adjust for hormone replacement</p> <p>16 therapy usage, correct?</p> <p>17 A. Yes.</p> <p>18 Q. If hormone replacement therapy</p> <p>19 is a risk factor for ovarian cancer, then the</p> <p>20 Terry 2013 meta-analysis did not account for</p> <p>21 that potential confounding factor, correct?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. Correct.</p>
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<p>1 involved in ovarian cancer risk are just</p> <p>2 being published in the literature, correct?</p> <p>3 MS. O'DELL: Object to the</p> <p>4 form.</p> <p>5 A. I believe that is true.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. For example, history of</p> <p>8 chlamydia infection, have you read about that</p> <p>9 possibly being involved in ovarian cancer</p> <p>10 risk?</p> <p>11 A. I haven't read that</p> <p>12 specifically. I was thinking more about the</p> <p>13 new information regarding genetic</p> <p>14 susceptibilities.</p> <p>15 Q. Also, weight gain during</p> <p>16 adolescence, is that another relatively new</p> <p>17 possible ovarian cancer risk factor?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. It is, but obesity has been</p> <p>21 recognized as a cofactor for many years.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. History of chlamydia infection,</p> <p>24 weight gain during adolescence, those were</p>	<p>1 BY MR. ZELLERS:</p> <p>2 Q. You cannot say whether the odds</p> <p>3 ratio of the Terry 2013 study would have been</p> <p>4 lower if the authors had adjusted for hormone</p> <p>5 replacement therapy usage, correct?</p> <p>6 A. I cannot say that. Yes.</p> <p>7 Q. Recall bias. You're familiar</p> <p>8 with recall bias?</p> <p>9 A. I am.</p> <p>10 Q. That is also a concern in every</p> <p>11 retrospective study, correct?</p> <p>12 A. Yes.</p> <p>13 Q. Recall bias can distort a</p> <p>14 scientific evaluation of whether an exposure</p> <p>15 is actually related to a disease; is that</p> <p>16 right?</p> <p>17 A. Yes, it can.</p> <p>18 Q. For example, recall bias could</p> <p>19 distort results if women with ovarian cancer</p> <p>20 were more likely to remember their exposure</p> <p>21 to talc than women without ovarian cancer; is</p> <p>22 that right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>

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<p>1 A. That's correct.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. The effects of recall bias can</p> <p>4 be very real; is that right?</p> <p>5 MS. O'DELL: Object to the</p> <p>6 form.</p> <p>7 A. I'm not sure what you mean by</p> <p>8 very real.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Well, let's look at one of the</p> <p>11 studies that you cite. You cited the</p> <p>12 Schildkraut study in your report and you</p> <p>13 referred to it a bit earlier as supporting</p> <p>14 dose-response; is that right?</p> <p>15 A. Yes.</p> <p>16 Q. That's a study by Schildkraut</p> <p>17 and others titled Association Between Body</p> <p>18 Powder Use and Ovarian Cancer, the</p> <p>19 African-American Cancer Epidemiologic -- or</p> <p>20 Epidemiology Study.</p> <p>21 Is that right?</p> <p>22 A. Yes.</p> <p>23 Q. I've got it here for you.</p> <p>24 A. Okay.</p>	<p>1 publicity from lawsuits might influence the</p> <p>2 participants' recall of prior body powder</p> <p>3 use; is that right?</p> <p>4 A. This was a recent study, so</p> <p>5 that was more likely.</p> <p>6 Q. If you look on page 2,</p> <p>7 right-hand side, last paragraph that starts</p> <p>8 "Covariates include."</p> <p>9 Do you see that?</p> <p>10 A. Yes.</p> <p>11 Q. And I'm reading about</p> <p>12 two-thirds of the way down: Two class action</p> <p>13 lawsuits were filed in 2014 concerning</p> <p>14 possible carcinogenic effects of body powder</p> <p>15 which may have influenced recall of use;</p> <p>16 therefore, year of interview 2014 or later,</p> <p>17 yes/no, was concluded as a covariate in the</p> <p>18 logistic regression models.</p> <p>19 Is that correct?</p> <p>20 A. That's correct.</p> <p>21 Q. So go to page 4, Table 2. This</p> <p>22 is the adjusted odds ratio for the</p> <p>23 associations between mode, frequency and</p> <p>24 duration of body powder use in ovarian</p>
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<p>1 (Carson Deposition Exhibit 24</p> <p>2 marked.)</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Deposition Exhibit 24 is the</p> <p>5 Schildkraut study, 2016, correct?</p> <p>6 (Pause.)</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. Did you say correct?</p> <p>9 A. I think I did. I'm sorry.</p> <p>10 Q. That's all right. I may have</p> <p>11 missed it.</p> <p>12 Exhibit 24 is the Schildkraut</p> <p>13 2016 study; is that right?</p> <p>14 A. Yes.</p> <p>15 Q. This is one of the studies that</p> <p>16 you cite to and that you relied on in forming</p> <p>17 your opinions; is that right?</p> <p>18 A. Yes.</p> <p>19 Q. The study looked at, among</p> <p>20 other things, what impact, if any, lawsuit</p> <p>21 filings in 2014 had on whether women recalled</p> <p>22 using talc in the past, correct?</p> <p>23 A. I believe so.</p> <p>24 Q. The authors thought that the</p>	<p>1 cancer; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. The second column shows the</p> <p>4 number of cases, and that would be women with</p> <p>5 ovarian cancer; is that right?</p> <p>6 A. That's correct.</p> <p>7 Q. The third column shows the</p> <p>8 controls; that's the women who do not have</p> <p>9 ovarian cancer, correct?</p> <p>10 A. Yes.</p> <p>11 Q. Looking at this data before</p> <p>12 2014, before the lawsuits, the percentage of</p> <p>13 controls, meaning women without ovarian</p> <p>14 cancer, said they used talc on their genitals</p> <p>15 was 34%; is that right?</p> <p>16 So those are women who were</p> <p>17 interviewed before 2014.</p> <p>18 A. Yes. Any genital use controls,</p> <p>19 34%.</p> <p>20 Q. And the controls, again, are</p> <p>21 women without ovarian cancer.</p> <p>22 A. That's correct.</p> <p>23 Q. The percentage of cases,</p> <p>24 meaning women with ovarian cancer, that were</p>

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<p>1 interviewed before 2014 that said they used</p> <p>2 talc on their genitals was 36.5%; is that</p> <p>3 right?</p> <p>4 A. That's correct.</p> <p>5 Q. So roughly the same reporting</p> <p>6 of genital talc use between women with and</p> <p>7 without ovarian cancer occurred for those</p> <p>8 women interviewed before the lawsuits were</p> <p>9 filed; is that right?</p> <p>10 A. That's correct.</p> <p>11 Q. Then look at what happened</p> <p>12 after the lawsuits were filed in 2014. For</p> <p>13 women interviewed after 2014, the percent of</p> <p>14 women without ovarian cancer that said they</p> <p>15 used talc on their genitals was 34.4%; is</p> <p>16 that right?</p> <p>17 A. That's correct.</p> <p>18 Q. So based on this data, the</p> <p>19 lawsuits had essentially no effect on how</p> <p>20 many of the women without ovarian cancer, the</p> <p>21 controls, remembered or recalled using baby</p> <p>22 powder; is that right?</p> <p>23 A. Well, the percentage is the</p> <p>24 same in both cases.</p>	<p>1 BY MR. ZELLERS:</p> <p>2 Q. In this study, lawsuit filings</p> <p>3 appears to have affected how many women with</p> <p>4 ovarian cancer remembered using talc on their</p> <p>5 genitals but basically had no effect on the</p> <p>6 memory of women without ovarian cancer; is</p> <p>7 that right?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. You can't say that this is --</p> <p>11 this demonstrates recall bias. It could.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. These findings could be an</p> <p>14 example of the potential effect of recall</p> <p>15 bias; is that right?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. That is correct.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. So pre-2014 there was an odds</p> <p>21 ratio of 1.19 with the confidence interval</p> <p>22 ranging from .87 to -- strike that --</p> <p>23 from .87 to 1.63, so there is not statistical</p> <p>24 significance pre-2014; is that right?</p>
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<p>1 Q. It went from 34% to 34.4%; is</p> <p>2 that right?</p> <p>3 A. That's correct.</p> <p>4 Q. For women with ovarian cancer,</p> <p>5 before the lawsuits were filed, 36.5% of them</p> <p>6 said they recalled using baby powder; is that</p> <p>7 right?</p> <p>8 A. That's right.</p> <p>9 Q. But after the lawsuits were</p> <p>10 filed, the percent of women with ovarian</p> <p>11 cancer who said they used baby powder went up</p> <p>12 to 51.5%; is that right?</p> <p>13 A. That is also correct.</p> <p>14 Q. Is that a significant increase</p> <p>15 from 36.5%?</p> <p>16 A. I don't know, but it seems like</p> <p>17 it might be.</p> <p>18 Q. So after the lawsuits were</p> <p>19 filed, the percent of women with ovarian</p> <p>20 cancer who said they used baby powder jumped</p> <p>21 significantly; is that right?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. Well, that's -- that is true.</p>	<p>1 A. Probably not.</p> <p>2 Q. If the study had been</p> <p>3 terminated as of 2014, prior to the lawsuits</p> <p>4 being filed, then the results of the study</p> <p>5 would have been that genital talc use was not</p> <p>6 statistically significantly associated with</p> <p>7 an increased risk of ovarian cancer; is that</p> <p>8 right?</p> <p>9 MS. O'DELL: Object to the</p> <p>10 form.</p> <p>11 A. Yes.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Did you make an attempt to</p> <p>14 account for this potential recall bias in</p> <p>15 weighing the Schildkraut study?</p> <p>16 A. The authors did that for me by</p> <p>17 including the period of the interview as a</p> <p>18 cofactor in the logistic regression models.</p> <p>19 It accounts for this difference that you see</p> <p>20 on the table.</p> <p>21 Q. You do agree there was no</p> <p>22 statistically significant finding of an odds</p> <p>23 ratio prior to 2014, the data collected</p> <p>24 through that time; is that right?</p>

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<p>1 A. In the -- in the data collected</p> <p>2 on those -- let me see here. In the data</p> <p>3 collected on those 351 cases and</p> <p>4 corresponding controls, there was not a</p> <p>5 significant odds ratio.</p> <p>6 Q. I want to go back and ask you a</p> <p>7 few questions about some of the things I had</p> <p>8 talked to you before about.</p> <p>9 In terms of this chatter about</p> <p>10 IARC, who has told you this?</p> <p>11 A. There are a number of</p> <p>12 environmental websites and -- that also</p> <p>13 operate on social media that discuss this</p> <p>14 kind of thing.</p> <p>15 Q. So there's social media</p> <p>16 websites that have talked about at least the</p> <p>17 possibility of IARC revisiting the issue?</p> <p>18 A. Yes, among many other things.</p> <p>19 Q. I asked you earlier about</p> <p>20 cornstarch, and you believe that cornstarch</p> <p>21 is rapidly cleared from the body, including</p> <p>22 the ovaries; is that right?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p>1 factors -- or latency periods for a number of</p> <p>2 different types of cancers and tumors based</p> <p>3 on the incidence data and what is known about</p> <p>4 the natural progression of those tumors over</p> <p>5 time.</p> <p>6 I can't recall at the moment</p> <p>7 exactly where I determined the latency period</p> <p>8 for ovarian cancer to be between 20 and</p> <p>9 40 years.</p> <p>10 We do have a paper that's</p> <p>11 referenced here that discusses the</p> <p>12 determination of latency periods and includes</p> <p>13 ovarian cancer as one of the tumors that it</p> <p>14 determines a latency period for, and it uses</p> <p>15 a mathematical formula with various factors</p> <p>16 plugged into it to calculate that.</p> <p>17 In that particular article, the</p> <p>18 latency factor -- period was very long. I</p> <p>19 think it was 44 years on the average.</p> <p>20 Q. You do not have personal</p> <p>21 expertise in terms of the latency period for</p> <p>22 ovarian cancer, correct?</p> <p>23 A. I have -- I've calculated</p> <p>24 latency periods as an exercise when I was in</p>
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<p>1 A. Yes.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. What is the mechanism by which</p> <p>4 you believe that cornstarch is rapidly</p> <p>5 cleared from the body, including the ovaries?</p> <p>6 A. It's primarily composed of</p> <p>7 carbohydrate with a small amount of</p> <p>8 structural material, probably cellulose, and</p> <p>9 those materials are broken down in body</p> <p>10 fluids fairly rapidly and dissolved and</p> <p>11 become part of the general milieu of the</p> <p>12 body.</p> <p>13 Q. Does cornstarch create</p> <p>14 inflammation in the body?</p> <p>15 A. Yes.</p> <p>16 Q. You testified that the latency</p> <p>17 period for ovarian cancer is between 20 and</p> <p>18 40 years; is that right?</p> <p>19 A. Roughly, yes.</p> <p>20 Q. What is the basis for you</p> <p>21 saying that?</p> <p>22 A. There are a number of factors</p> <p>23 that influence that, but there are</p> <p>24 organizations that have determined latency</p>	<p>1 graduate school, but that's not something I</p> <p>2 normally do. I usually defer to the -- those</p> <p>3 who have published latency periods for that</p> <p>4 information.</p> <p>5 Q. You are recalling that at least</p> <p>6 in some of the study or studies that you've</p> <p>7 reviewed that the latency period for ovarian</p> <p>8 cancer is 20 to 40 years, correct?</p> <p>9 A. Yes.</p> <p>10 Q. Are you able to tell us which</p> <p>11 study or studies you're relying on for that</p> <p>12 information?</p> <p>13 A. I'd have to go through my list</p> <p>14 to find it. Do you mind if I take a moment</p> <p>15 to do that?</p> <p>16 Q. Define "a moment."</p> <p>17 A. Well, however long it takes me</p> <p>18 to find it in that list, but --</p> <p>19 Q. Let me see if I can shortcut</p> <p>20 it.</p> <p>21 Do you believe that the latency</p> <p>22 period for ovarian cancer is something you've</p> <p>23 written out in one of your handwritten notes?</p> <p>24 A. I don't believe so.</p>

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<p>1 Q. It would be -- where would it 2 be?</p> <p>3 MS. O'DELL: If you need a 4 moment to review either your report or 5 your materials list, you know --</p> <p>6 THE WITNESS: I don't believe 7 that particular piece of information 8 is in my report, but it's -- I think I 9 could come up with it fairly quickly 10 if I --</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. All right. Go ahead. Find for 13 us the study or studies you're relying on for 14 the latency period of ovarian cancer.</p> <p>15 A. Okay. If I'm lucky, I may hit 16 on it here.</p> <p>17 (Document review.)</p> <p>18 A. It's the Diana Nadler and Igor 19 Zurbenko paper Estimating Cancer Latency 20 Times Using the Weibull Model.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. You're looking at Exhibit 4, 23 your literature list; is that right?</p> <p>24 A. Yes.</p>	<p>1 MS. BOCKUS: If you want to 2 pass me your microphone, I think I can 3 stay here. I'm not going to pass him 4 that many exhibits.</p> <p>5 MR. ZELLERS: I'm happy to help 6 you.</p> <p>7 MS. BOCKUS: Thank you.</p> <p>8 EXAMINATION</p> <p>9 BY MS. BOCKUS:</p> <p>10 Q. Dr. Carson, my name is Jane 11 Bockus. I'm not certain I actually 12 introduced myself to you this morning, but I 13 represent Imerys in this litigation.</p> <p>14 Do you understand that?</p> <p>15 A. I do.</p> <p>16 Q. Before Mr. Abney contacted you 17 about preparing a report that would explain 18 the relationship between regular perineal use 19 of talc based on personal hygiene products 20 and subsequent development of ovarian cancer, 21 is that anything that you had researched 22 before that date?</p> <p>23 MS. O'DELL: Object to the 24 form.</p>
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<p>1 Q. What page of Exhibit 4 are you 2 looking at?</p> <p>3 A. Page 17 in the Ns.</p> <p>4 Q. Are you finished?</p> <p>5 A. There may be others in the 6 list, but you asked me to cite one. You want 7 me to continue looking?</p> <p>8 Q. No, I -- that is sufficient for 9 my purposes. Thank you.</p> <p>10 Dr. Carson, there have been 11 some studies where talc particles had been 12 observed or reported in the ovaries of women 13 who have had perineal talc use; is that 14 right?</p> <p>15 A. Yes.</p> <p>16 Q. Heller was one of the studies 17 that we talked about, correct?</p> <p>18 A. Correct.</p> <p>19 Q. In those studies, there has not 20 been inflammation noted; is that right?</p> <p>21 A. No, there -- that's not been an 22 important finding.</p> <p>23 MR. ZELLERS: I have no further 24 questions for you.</p>	<p>1 A. I don't think Mr. Abney -- 2 well, he may have been that detailed in our 3 discussion. But in response to your 4 question, that's not a specific question I 5 had researched in the past, although I had 6 researched related kinds of issues.</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. So would it be fair to say that 9 the opinions contained in your report are all 10 opinions that you have come to as a result of 11 doing the research at the request of 12 Mr. Abney and others in the plaintiffs' 13 lawyer group?</p> <p>14 MS. O'DELL: Object to the 15 form.</p> <p>16 A. Yes.</p> <p>17 BY MS. BOCKUS:</p> <p>18 Q. Okay. And I'm going to 19 apologize right now. I'll be jumping around 20 because most of my outline has already been 21 covered, so let me just get you to look at 22 your report, if I could, and I'm going to ask 23 you some questions about it.</p> <p>24 Turn to page 4, and</p>

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<p>1 paragraph (b), the first sentence reads:  2 Numerous studies have examined the  3 cancer-causing characteristics of talc.  4 Do you see that?  5 A. Yes.  6 Q. And you identified Wilde as  7 your source for that statement, correct?  8 A. That is correct.  9 Q. Isn't it correct that the Wild  10 study actually exonerated talc as having  11 cancer-causing characteristics?  12 A. That was a conclusion of the  13 author, but the reason it's cited there is  14 because that's an example of the  15 investigation of the relationship.  16 Q. Okay. But in that study,  17 they -- he concluded that talc alone did not  18 cause cancer, correct?  19 A. As I recall, that was the  20 general conclusion, yes.  21 Q. Okay. Then in the next couple  22 of sentences, you say that talc has caused  23 cancer when implanted in various tissues and  24 under the skin in laboratory animals. It</p>	<p>1 A. No.  2 Q. And then going on, you talk  3 about the fact that there in that same  4 paragraph, if you go down, you talk about  5 IARC and the fact that IARC concluded that  6 talcum powder use by women for feminine  7 hygiene is a possible human carcinogen;  8 that's not a classification of talc as a  9 carcinogen, correct?  10 MS. O'DELL: Object to the  11 form.  12 A. It is within the spectrum of  13 carcinogens.  14 BY MS. BOCKUS:  15 Q. It's possible.  16 A. That's correct.  17 Q. And then you say that --  18 meaning that there is insufficient evidence  19 of carcinogenesis in humans, but strong  20 evidence in other mammalian species.  21 Can you tell me where in IARC  22 it says that there is strong evidence that  23 talc causes ovarian cancer in other mammalian  24 species?</p>
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<p>1 causes inflammation and fibrotic reaction,  2 including the chemotaxis of inflammatory  3 immune cells and accelerated growth and  4 division of cells in the involved tissue.  5 And you cite Okada 2007 for  6 that proposition; is that correct?  7 A. That's correct.  8 Q. But Okada wasn't even looking  9 at talc, was it?  10 A. Let me see here. Okada was  11 looking at inflammation as -- as the endpoint  12 in the various components of inflammation  13 which I talked about here, the chemotaxis of  14 inflammatory immune cells, accelerated growth  15 division in the involved tissues.  16 Q. But what you say is that talc  17 causes. When you say "it," you're referring  18 to talc, correct? It causes inflammation and  19 fibrotic reaction; isn't that what you're  20 saying in this sentence?  21 A. It is talc, yes.  22 Q. Okay. And yet, Okada, the  23 study that you cite for that proposition,  24 doesn't look at talc at all, does it?</p>	<p>1 A. I think the issue is not  2 specifically ovarian cancer; the issue is  3 cancer. And that's the point of view of  4 IARC, and that's what's alluded to here.  5 Q. So this is the one exhibit I'm  6 going to hand you, if I can get that one  7 marked by my assistant.  8 MR. ZELLERS: Exhibit 25.  9 (Carson Deposition Exhibit 25  10 marked.)  11 MS. O'DELL: This is a page out  12 of the monograph?  13 MS. BOCKUS: Yes.  14 MS. O'DELL: Are you going to  15 identify it?  16 MS. BOCKUS: And he can look it  17 up in his whole monograph. I just  18 pulled the page for simplicity.  19 MS. O'DELL: So feel free to do  20 that, Doctor.  21 MS. BOCKUS: Yes, page 412.  22 BY MS. BOCKUS:  23 Q. So looking at Exhibit 25, this  24 is a page from the IARC monograph where it</p>

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<p>1 talks about the data -- the evidence that 2 they have and the evidence that they 3 reviewed. 4 Do you see that? 5 A. That's correct. 6 Q. And what they actually state 7 with regard to experimental evidence is that 8 there is limited evidence in experimental 9 animals for the carcinogenicity of talc not 10 containing asbestos or asbestiform fibers. 11 Correct? 12 MS. O'DELL: Object to the 13 form. 14 BY MS. BOCKUS: 15 Q. Did I read it incorrectly? 16 A. No, I just lost you for a 17 moment. 18 Q. It's one sentence. Go ahead 19 and take your time and read it. 20 A. Yes, I agree with that. They 21 found that inhaled talc, which does not 22 contain asbestos or asbestiform fibers, is 23 Group 3. 24 Q. That wasn't my question. I'm</p>	<p>1 black, titanium dioxide and talc. 2 So regarding talc, the overall 3 point of view here is whether or not it 4 produces cancer, not just ovarian cancer, not 5 just lung cancer, but any cancer. 6 And so I'm not sure that that 7 responds to your question. 8 BY MS. BOCKUS: 9 Q. No. My question was: You 10 state in your report that IARC found strong 11 evidence in animals, and I want to know where 12 you believe that statement occurs in the IARC 13 monograph, or do you know? 14 MS. O'DELL: And if you need a 15 minute to look, feel free to do that. 16 A. Well, I can say that it might 17 take me a while to look for it, but I can say 18 that that's the basic definition of Group 2B, 19 is limited evidence in humans and compelling 20 evidence in animals or other -- 21 BY MS. BOCKUS: 22 Q. Tell me where you're looking at 23 that definition of 2B. 24 A. Let me see here.</p>
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<p>1 talking about experimental animals because 2 that's what -- you state in your report that 3 IARC found strong evidence in animals, and 4 yet the part of IARC that I know of where 5 they're addressing the animal data with 6 regard to talc is what I handed you in 7 Section 6.2, and it states there's limited 8 evidence, correct? 9 MS. O'DELL: Objection. 10 A. It states that there's limited 11 evidence -- I need to find this section in 12 the monograph. Just bear with me for a 13 moment. It's page 412? 14 (Document review.) 15 A. Okay. I seem to be missing 16 that part of the monograph. 17 MS. O'DELL: Do you have the 93 18 monograph? 19 THE WITNESS: Where's the -- 20 this is 100C, and this is 93. Okay. 21 Here it is. All right. Okay. 22 A. Okay. The entire monograph is 23 designed to evaluate carcinogenic risk, and 24 it looks at three different species, carbon</p>	<p>1 Q. We earlier marked the... 2 Exhibit 21, I think. 3 A. Well, I have this other 4 exhibit, which is the preamble from another 5 situation; it's Exhibit P-346, and... 6 Q. Well, let me just ask a 7 different question, rather than looking at 8 the preamble. 9 A. All right. 10 Q. Because that's kind of 11 overarching. 12 A. It is. 13 Q. To know what IARC found with 14 regard to talc and the evidence in animal 15 models, wouldn't it be more appropriate to 16 look at what they actually said about talc in 17 the animal studies? 18 A. Yes. 19 MS. O'DELL: Objection, form. 20 A. I would agree that that's the 21 case. 22 BY MS. BOCKUS: 23 Q. And to your knowledge, nowhere 24 did they find strong evidence of</p>

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<p>1 cancer-causing potential of talc in animal 2 studies, correct? 3 MS. O'DELL: Objection to form. 4 A. Well -- well, it says on that 5 page there's limited evidence in experimental 6 animals, so I'll agree that at least in this 7 location it does not say strong evidence. 8 BY MS. BOCKUS: 9 Q. And without going through the 10 entire monograph, you don't know where that 11 language came from, is that fair, that you 12 used in your report? 13 MS. O'DELL: Object. Excuse 14 me. Object to the form. I think he 15 was pointing -- directing you to the 16 preamble and you withdrew your 17 question, but -- 18 MS. BOCKUS: Well, let me just 19 ask a qualifying question. 20 BY MS. BOCKUS: 21 Q. Does the preamble in any way 22 address their findings with regards to talc? 23 A. No, the preamble addresses the 24 methodology that's used by the IARC agency in</p>	<p>1 misstates the evidence. 2 A. I believe that was their 3 assumption. 4 BY MS. BOCKUS: 5 Q. Okay. The studies that you 6 reference in support of the notion that 7 asbestos in -- that may or may not exist in 8 body powder contributes to cause ovarian 9 cancer, none of the studies that you cite to 10 have referenced an application of a product 11 to the perineum of the women and girls study, 12 correct? 13 MS. O'DELL: Object to the 14 form. 15 THE WITNESS: I have a -- I 16 apologize greatly, but I lost the 17 track. Could you repeat that 18 question. 19 MS. BOCKUS: That's totally 20 understandable because it was a little 21 bit convoluted. 22 MS. O'DELL: Do you mind if we 23 get the realtime running again? We're 24 just off track here.</p>
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<p>1 addressing all the substances that they 2 evaluate. 3 Q. Okay. 4 A. And that's usually where I pull 5 things like that. 6 MS. O'DELL: Are you finished, 7 Doctor? 8 THE WITNESS: Unless I'm going 9 to continue to search for this. 10 BY MS. BOCKUS: 11 Q. I don't need for you to look in 12 the preamble, because I'm really only 13 interested in their findings as to talc, not 14 their overarching methodology, that sort of 15 thing. 16 A. Okay. But it's important to 17 point out that this particular monograph is 18 an evaluation of the carcinogenicity of talc 19 that does not contain asbestos or asbestiform 20 fibers, so -- 21 Q. Correct. Which was, from their 22 view, the talc that was included in all of 23 the studies that they reviewed, correct? 24 MS. O'DELL: Objection,</p>	<p>1 MS. BOCKUS: That's okay. 2 BY MS. BOCKUS: 3 Q. I'm looking on page 5. Do you 4 see on page 5 of your report, sir, 5 paragraph (c)? 6 A. Yes. 7 Q. And there you cite one, two, 8 three, four, five, six, seven, eight, nine, 9 10, 11, 12 studies, correct? 10 A. Yes. 11 Q. Do you speak Italian? 12 A. I can read it pretty well. 13 Q. Is that what you did for the 14 Bertolotti study? 15 A. The Bertolotti study. Yes, I 16 read most of it. I may have kibitzed with 17 some of my colleagues about the meaning of a 18 few words. 19 Q. At any rate, all of these 20 studies have to do with heavy occupational 21 exposure to asbestos, correct? 22 MS. O'DELL: Object to the 23 form. 24 A. Yes.</p>

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<p>1 BY MS. BOCKUS:</p> <p>2 Q. And you don't have any</p> <p>3 information how the dose of asbestos to which</p> <p>4 these women were exposed during their heavy</p> <p>5 occupational exposure compares to any</p> <p>6 exposure to asbestos from the use of body</p> <p>7 powder, correct?</p> <p>8 A. Well, I think these were not</p> <p>9 all occupational exposures, but I do not have</p> <p>10 information regarding things like the route</p> <p>11 of exposure, no.</p> <p>12 Q. Do you have any information</p> <p>13 regarding the dose?</p> <p>14 A. No, I don't.</p> <p>15 Q. Do you have any information</p> <p>16 that would compare the dose of asbestos to</p> <p>17 which the women in these studies were</p> <p>18 exposed --</p> <p>19 A. Well, in some of the studies --</p> <p>20 Q. Wait, I haven't finished my</p> <p>21 question.</p> <p>22 A. Sorry.</p> <p>23 Q. -- to any alleged dose of</p> <p>24 asbestos in body powder?</p>	<p>1 microenvironment, and based on what we know</p> <p>2 about the mechanism of action of talc as well</p> <p>3 and even asbestos, they're all similar, and</p> <p>4 for that reason would be expected to be</p> <p>5 additive.</p> <p>6 Q. But the study hasn't been done</p> <p>7 even in a petri dish, has it?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. I don't know if there's</p> <p>11 something in progress or not, but that's the</p> <p>12 kind of study that is currently being looked</p> <p>13 at. Combined exposures is the -- sort of the</p> <p>14 hallmark of research these days in</p> <p>15 toxicology.</p> <p>16 BY MS. BOCKUS:</p> <p>17 Q. Do you know of anyone who's</p> <p>18 looking at that question?</p> <p>19 A. I don't.</p> <p>20 Q. Okay. Have any of the heavy</p> <p>21 metals that you have identified been</p> <p>22 identified as carcinogenic to the ovary by</p> <p>23 IARC?</p> <p>24 A. No.</p>
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<p>1 Can you make any comparison</p> <p>2 whatsoever to the amount of asbestos to which</p> <p>3 these women were exposed to any exposure by</p> <p>4 any woman who has used a Johnson &amp; Johnson</p> <p>5 body powder?</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 A. I don't think I'm able to make</p> <p>9 that kind of comparison.</p> <p>10 BY MS. BOCKUS:</p> <p>11 Q. Okay. There are ways to study</p> <p>12 whether two toxins combined increase a risk</p> <p>13 more than exposure to a single toxin, whether</p> <p>14 it -- whether one offsets the risk of one of</p> <p>15 the toxins or whether you add them together,</p> <p>16 even multiply them together, right?</p> <p>17 A. Yes.</p> <p>18 Q. Has any such study ever been</p> <p>19 done with regard to talc and the heavy metals</p> <p>20 that you identify in your report?</p> <p>21 A. Not specifically a study to</p> <p>22 look at the combined contribution, but we</p> <p>23 know a lot about the mechanism of action of</p> <p>24 the metals in particular in the</p>	<p>1 Q. I want you to turn to page 7</p> <p>2 now, if you would, please, on other evidence.</p> <p>3 And you've talked about this paragraph a fair</p> <p>4 amount already, and I don't want to repeat</p> <p>5 any of the prior questions.</p> <p>6 But I want to ask you about the</p> <p>7 statement in that first sentence, where you</p> <p>8 say that transport of talc-containing</p> <p>9 materials from the perineum to the upper</p> <p>10 reproductive tract and body cavities has been</p> <p>11 shown to occur with startling regularity.</p> <p>12 And I want to stop right there.</p> <p>13 If I recall your testimony</p> <p>14 correctly, none of these studies even look at</p> <p>15 the transport of talc-containing materials</p> <p>16 from the perineum to the upper reproductive</p> <p>17 tract; isn't that correct?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. Well, it is true that most of</p> <p>21 the research that's been done in this area</p> <p>22 has been done on materials that have been</p> <p>23 instilled into the vagina or the posterior</p> <p>24 fornix, but I think and it's my opinion that</p>



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<p>1 application to the perineum is equivalent to 2 that. 3 Q. Do you have an opinion as to 4 what percentage of the talcum powder applied 5 in a daily dusting to the perineum makes its 6 way to the vagina? 7 A. No, I don't know. 8 Q. Do you have an opinion as to 9 what percentage of the talc that, in your 10 opinion, would make its way to the vagina 11 would actually make its way to the cervix? 12 A. I don't know that either. 13 Q. And out of the talc that makes 14 its way to the cervix, what percentage makes 15 it past the cervix into the uterus? 16 A. That, I don't know either. 17 Q. Do you have any reason to 18 believe that talc would migrate with more 19 frequency or rapidity than sperm? 20 MS. O'DELL: Objection to form. 21 A. No, I don't have reason to 22 believe that would be the case. 23 BY MS. BOCKUS: 24 Q. Would you agree, in fact, that</p>	<p>1 those studies that you list here done in 2 women who were standing up? 3 A. The studies that I list in 4 other evidence? 5 Q. Yes. 6 A. I think not. 7 Q. In fact, were any of them done 8 in women who were inclined with their head 9 elevated over their hips? 10 A. No. 11 Q. So my question is: Where do 12 you get the term "startling regularity" with 13 regard to the transport of talc from outside 14 a woman's body to the upper reproductive 15 tract? 16 MS. O'DELL: Object to the 17 form. 18 A. The propensity of evidence of 19 rapid transport of particulate material 20 regarding -- regardless of its composition. 21 BY MS. BOCKUS: 22 Q. Particulate material inserted 23 well into a woman's vagina whose hips are 24 above her head, correct?</p>
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<p>1 it is unlikely that talc, an inert particle, 2 would travel as quickly or in the same 3 percentages as sperm through the reproductive 4 tract? 5 MS. O'DELL: Object to the 6 form. 7 A. I think the transport time is 8 roughly the same for any particulate matter, 9 including sperm. 10 BY MS. BOCKUS: 11 Q. Do you have any studies to 12 support that opinion? 13 A. Well, we know -- we know the -- 14 we know the velocity of motile sperm; it's 15 very slow. And we have studies that have 16 shown the progression of particles through 17 the fallopian tubes at at least that fast a 18 rate, possibly faster. 19 And so the motility of sperm is 20 slower than the rate at which it passes 21 through the female reproductive system, so 22 there are obviously other mechanisms at play 23 other than sperm motility. 24 Q. To your knowledge, were any of</p>	<p>1 MS. O'DELL: Objection to form. 2 A. Well, we have other studies 3 too. We have the powdered glove examination 4 studies, things of that nature, that are a 5 little bit different. 6 BY MS. BOCKUS: 7 Q. And you believe they support 8 your conclusion that talc is transported from 9 the perineum to the upper reproductive tract 10 with startling regularity? 11 A. I think that's a valid 12 conclusion supported by the evidence, yes. 13 Q. I'm turning to page 8 now, and 14 the number that you have here -- and you've 15 repeated it a couple of times today -- about 16 your opinion that the elimination of talc as 17 a risk could result in over 3,000 lives saved 18 in the U.S. each year. 19 How did you come to that 20 conclusion? 21 A. Well, I'm referring to talcum 22 powder here -- 23 Q. Okay. Sure. 24 A. -- which is the complete</p>



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<p>1 product.</p> <p>2 I came to that conclusion based</p> <p>3 on the number of new cases of ovarian cancer</p> <p>4 that are diagnosed in the United States each</p> <p>5 year and the number of ovarian cancer deaths</p> <p>6 that occur each year.</p> <p>7 And essentially, of 21,000 or</p> <p>8 so cases of -- new cases of ovarian cancer,</p> <p>9 there are corresponding 14,000 or more deaths</p> <p>10 each year, so that's a two-thirds fatality</p> <p>11 rate if you look over time.</p> <p>12 The -- at 30% increase in the</p> <p>13 risk of -- or a 30% increase in the risk of</p> <p>14 cancer applied in reverse, that is reducing</p> <p>15 those -- that 30% increased risk from the use</p> <p>16 of perineal application of talcum powder</p> <p>17 could result in the prevention of as many as</p> <p>18 3,000 lives, depending on the prevalence of</p> <p>19 use.</p> <p>20 Q. Would that calculation require</p> <p>21 that 100% of the women in the U.S. be using</p> <p>22 talcum powder on a daily basis?</p> <p>23 A. It would require a hundred</p> <p>24 percent of the women in the U.S. to stop</p>	<p>1 A. There may not have been use of</p> <p>2 talcum powder in all those women, that's</p> <p>3 correct.</p> <p>4 Q. Do you have any notion as to</p> <p>5 what percent of those women may have used</p> <p>6 talcum powder?</p> <p>7 A. Based on these various studies,</p> <p>8 it seems to vary between 30 and 60%. It's</p> <p>9 more so in the U.S., Australia and the U.K.</p> <p>10 Q. Do you have an opinion as to</p> <p>11 how regularly a women needs to use talcum</p> <p>12 powder before her risk of ovarian cancer is</p> <p>13 increased by 30%?</p> <p>14 A. Well, based on the epidemiology</p> <p>15 studies, that risk occurs in the population</p> <p>16 in general from ever use as opposed to never</p> <p>17 use, and so it would depend on the individual</p> <p>18 woman.</p> <p>19 Each person has an individual</p> <p>20 susceptibility and individual characteristics</p> <p>21 and would probably have an individual use</p> <p>22 pattern. So I couldn't say for any</p> <p>23 individual woman.</p> <p>24 Q. And that's not what I'm asking</p>
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<p>1 using talcum powder on a daily basis.</p> <p>2 Q. That wasn't my question.</p> <p>3 In order to attribute --</p> <p>4 A. Well, my answer to your</p> <p>5 question then is no.</p> <p>6 Q. In order to attribute 30% of</p> <p>7 all ovarian cancer deaths to the use of</p> <p>8 talcum powder -- let me back up.</p> <p>9 The data that you have that</p> <p>10 you've cited is talking about the percentage</p> <p>11 of women -- the percentage of women who use</p> <p>12 talcum powder who are diagnosed with ovarian</p> <p>13 cancer, correct?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. It is the total number of new</p> <p>17 diagnoses per year.</p> <p>18 BY MS. BOCKUS:</p> <p>19 Q. Okay.</p> <p>20 A. I think last year was</p> <p>21 22,000-something.</p> <p>22 Q. But that number, 22,000, 100%</p> <p>23 of those women did not use talcum powder,</p> <p>24 correct?</p>	<p>1 for. I'm really asking for in general,</p> <p>2 because that's what epidemiology is, correct?</p> <p>3 It's not talking about an individual woman,</p> <p>4 right?</p> <p>5 A. That's correct, it's describing</p> <p>6 it in the population.</p> <p>7 Q. So in the population, in the</p> <p>8 studies that you've reviewed, what is the</p> <p>9 minimum number of days per month, or however</p> <p>10 you want to describe it, that a woman would</p> <p>11 need to use talcum powder before she would be</p> <p>12 included in the group that you believe have a</p> <p>13 30% increased risk of ovarian cancer?</p> <p>14 MS. O'DELL: Object to the</p> <p>15 form.</p> <p>16 A. The only qualifier that I've</p> <p>17 been able to come up with and that I've used</p> <p>18 in this report is the regular use of talcum</p> <p>19 powder.</p> <p>20 BY MS. BOCKUS:</p> <p>21 Q. Okay.</p> <p>22 A. And that is going to vary over</p> <p>23 a broad range. It would be periodically</p> <p>24 daily to several times a week would be</p>

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<p>1 regular use.</p> <p>2 Q. And over how many years must a</p> <p>3 woman use talcum powder on a regular basis</p> <p>4 before her risk of ovarian cancer is</p> <p>5 increased to 30% --</p> <p>6 MS. O'DELL: Object to the</p> <p>7 form.</p> <p>8 BY MS. BOCKUS:</p> <p>9 Q. -- in your opinion?</p> <p>10 MS. BOCKUS: Sorry.</p> <p>11 A. Some of the studies have</p> <p>12 focused on usage periods as short as one</p> <p>13 year, but most have studied longer periods of</p> <p>14 use and separated use into things like</p> <p>15 decades or accumulated total person-years</p> <p>16 based on reports of the women, multiplying</p> <p>17 frequency by time.</p> <p>18 So again, it would depend on</p> <p>19 the individual, but the research reports</p> <p>20 hover around five to ten years of regular</p> <p>21 use, resulting in significant odds ratios.</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. As I understand it in</p> <p>24 toxicology, one of the basic tenets is that</p>	<p>1 no threshold of exposure for risk; that we</p> <p>2 are -- we are right to use a zero threshold</p> <p>3 approach until we know more about the</p> <p>4 possibility of a threshold below which</p> <p>5 exposure would be safe. At the current time</p> <p>6 we don't have that information.</p> <p>7 Q. Do you believe that there</p> <p>8 probably is a threshold below which use is</p> <p>9 safe?</p> <p>10 A. In the carcinogenic process,</p> <p>11 which we haven't really talked about in this</p> <p>12 session today, there is an insult to a cell</p> <p>13 which affects the genetic material, the DNA.</p> <p>14 And there are built-in repair mechanisms that</p> <p>15 the cell has for fixing that problem that</p> <p>16 occurred, a mutation, for example.</p> <p>17 These kinds of insults are</p> <p>18 happening to cells all the time, not just</p> <p>19 from carcinogens in our environment, but just</p> <p>20 from natural occurrences, even endogenous</p> <p>21 biochemical reactions cause these problems.</p> <p>22 The question is: Is the repair</p> <p>23 process sufficient to undo what's been done?</p> <p>24 And an exposure to environmental carcinogens,</p>
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<p>1 it's the dose that makes the poison, correct?</p> <p>2 A. That's correct.</p> <p>3 Q. That water can kill you if you</p> <p>4 drink too much of it, right?</p> <p>5 A. Theoretically.</p> <p>6 Q. In a short period of time.</p> <p>7 And so I'm trying to find out</p> <p>8 what you have determined is the threshold of</p> <p>9 risk is -- for talcum powder use by women.</p> <p>10 Do you have an opinion as to at what point a</p> <p>11 threshold has been reached where the use of</p> <p>12 talcum powder by women in their perineal</p> <p>13 region increases their risk?</p> <p>14 A. I think any use of carcinogenic</p> <p>15 materials or any exposure to carcinogenic</p> <p>16 materials increases the risk somewhat. A</p> <p>17 greater exposure, based on the</p> <p>18 "dose makes the poison" principle, would</p> <p>19 result in a greater risk.</p> <p>20 And we know from toxicologic</p> <p>21 studies that intense exposures can sometimes</p> <p>22 accelerate the process and even shorten the</p> <p>23 latency period of a carcinogenic event.</p> <p>24 So my opinion is that there is</p>	<p>1 that repair process is often overwhelmed so</p> <p>2 that it cannot catch up with the damage</p> <p>3 that's being created, and a tumor is born,</p> <p>4 basically.</p> <p>5 That is where the concept of</p> <p>6 threshold comes from. Have we overwhelmed</p> <p>7 the repair or not, and we don't have enough</p> <p>8 research evidence or scientific evidence to</p> <p>9 be able to define that line at this point.</p> <p>10 Q. Has there ever been a study</p> <p>11 that showed that talcum powder caused DNA</p> <p>12 damage in normal ovarian epithelial tissue?</p> <p>13 A. Well, we do have the studies</p> <p>14 that have recently been produced by Fletcher</p> <p>15 and Saed that show the inflammatory process</p> <p>16 is influenced by talc, and this is nonfibrous</p> <p>17 talc, that result in mutagenic events that</p> <p>18 are available for promotion, and there are</p> <p>19 biomarkers that have also been established</p> <p>20 for that.</p> <p>21 Q. The studies by Saed did not</p> <p>22 demonstrate DNA mutation, did they?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>

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<p>1 A. I think they actually did.</p> <p>2 BY MS. BOCKUS:</p> <p>3 Q. That's your reading of them?</p> <p>4 A. Yes.</p> <p>5 Q. What Saed did is he placed talc</p> <p>6 on cultured ovarian cancer cells, correct?</p> <p>7 A. Yes.</p> <p>8 Q. And that actually -- what he</p> <p>9 recorded was an elevation in the CA-125?</p> <p>10 A. That's one of the things he</p> <p>11 did. He also measured -- he did a number of</p> <p>12 genetic studies. He did transcribed RNA. He</p> <p>13 located individual SNPs, which are single</p> <p>14 nucleotide polymorphisms, in the genetic</p> <p>15 material.</p> <p>16 And he found that as a result</p> <p>17 of that treatment, those mutations altered</p> <p>18 the effectiveness of antioxidant enzymes that</p> <p>19 are part of the protection mechanism and</p> <p>20 shield the repair process of the cell from</p> <p>21 further damage.</p> <p>22 Q. Let's go back to the CA-125.</p> <p>23 MS. O'DELL: If you need to</p> <p>24 pull the paper out, Doctor, just, if</p>	<p>1 THE WITNESS: I'm sorry, it</p> <p>2 appears that I do need to get the</p> <p>3 original paper here. There it is.</p> <p>4 Okay. Thank you.</p> <p>5 (Document review.)</p> <p>6 BY MS. BOCKUS:</p> <p>7 Q. Can you answer the question:</p> <p>8 Did Saed have any either positive or negative</p> <p>9 controls that he used in his experiments?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. I think he did, but I'd like to</p> <p>13 actually find it in here so I can give you</p> <p>14 the specifics.</p> <p>15 Well, he used normal cells and</p> <p>16 epithelial ovarian cancer cells, and one was</p> <p>17 the control for the other. He treated them</p> <p>18 in the same way.</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. Let me ask a different</p> <p>21 question.</p> <p>22 What I'm asking is: Did he</p> <p>23 use, say, glass beads to see if -- as a</p> <p>24 control to the talc? Did he have anything</p>
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<p>1 you want to take a moment and do that.</p> <p>2 I know you were searching for it while</p> <p>3 you were talking.</p> <p>4 THE WITNESS: Yes, I think I</p> <p>5 have it right here.</p> <p>6 MS. BOCKUS: These are just</p> <p>7 general questions that I'm going to</p> <p>8 ask you.</p> <p>9 MS. O'DELL: You still may get</p> <p>10 the paper out.</p> <p>11 MS. BOCKUS: Do whatever you</p> <p>12 want to do.</p> <p>13 THE WITNESS: You can go ahead.</p> <p>14 I'm...</p> <p>15 BY MS. BOCKUS:</p> <p>16 Q. What controls did Saed use?</p> <p>17 Did he use any controls? In other words, did</p> <p>18 he place a known foreign object that was</p> <p>19 not -- that was known not to be a carcinogen</p> <p>20 on the cultured ovarian cells to see if there</p> <p>21 was a difference?</p> <p>22 MS. O'DELL: Can you just pause</p> <p>23 just for a minute, let the doctor pull</p> <p>24 out the exhibit?</p>	<p>1 that he was controlling the cells' reaction</p> <p>2 to against the talc?</p> <p>3 A. I don't believe so.</p> <p>4 Q. That would be important in an</p> <p>5 experiment of this nature, would you not</p> <p>6 agree with that?</p> <p>7 MS. O'DELL: Object to the</p> <p>8 form.</p> <p>9 A. Well, he did utilize normal and</p> <p>10 cancerous cells, which would theoretically</p> <p>11 act as a control in that experiment.</p> <p>12 BY MS. BOCKUS:</p> <p>13 Q. That's not my question. I'm</p> <p>14 really asking about another element that he</p> <p>15 is exposing the cells to, both the normal and</p> <p>16 the cancerous cells.</p> <p>17 MS. O'DELL: Objection to form.</p> <p>18 BY MS. BOCKUS:</p> <p>19 Q. To see if the reaction was just</p> <p>20 a reaction to a foreign body versus talc</p> <p>21 specifically.</p> <p>22 Did he do that?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>

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<p>1 A. I don't believe that he</p> <p>2 provided a control exposure as part of this</p> <p>3 experiment.</p> <p>4 BY MS. BOCKUS:</p> <p>5 Q. And you would agree that there</p> <p>6 are many things that will increase a CA-125,</p> <p>7 correct?</p> <p>8 MS. O'DELL: Object to the</p> <p>9 form.</p> <p>10 A. Yes, it's an acute-phase</p> <p>11 reactant.</p> <p>12 BY MS. BOCKUS:</p> <p>13 Q. Pregnancy can increase</p> <p>14 somebody's CA-125?</p> <p>15 A. That's correct.</p> <p>16 Q. And with regard to the SNPs,</p> <p>17 that is not the same thing as a test showing</p> <p>18 mutation, correct?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 BY MS. BOCKUS:</p> <p>22 Q. It's a surrogate.</p> <p>23 A. Well, it's because there was</p> <p>24 transcribed RNA that was used to determine</p>	<p>1 A. I don't specifically know.</p> <p>2 BY MS. BOCKUS:</p> <p>3 Q. There's no way to know that, is</p> <p>4 there?</p> <p>5 A. No, there's not.</p> <p>6 Q. Let me find my -- there we go.</p> <p>7 The Saed paper that you were</p> <p>8 looking at just a minute ago, it has</p> <p>9 something printed across it. What does that</p> <p>10 say?</p> <p>11 A. In blue here?</p> <p>12 Q. Uh-huh.</p> <p>13 A. "For Peer Review."</p> <p>14 Q. Okay. So it hasn't yet been</p> <p>15 peer reviewed; is that correct?</p> <p>16 MS. O'DELL: Object to the</p> <p>17 form.</p> <p>18 A. It's been submitted.</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. So does that mean it has not</p> <p>21 yet been peer reviewed?</p> <p>22 MS. O'DELL: Object to the</p> <p>23 form.</p> <p>24 A. I think it's been accepted for</p>
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<p>1 their presence, and the -- it's just part of</p> <p>2 their procedure, but it identifies genetic</p> <p>3 alterations. And those genetic alterations</p> <p>4 transformed into differential enzyme</p> <p>5 activities.</p> <p>6 Q. Do you know whether there are</p> <p>7 standard tests for genotoxicity and</p> <p>8 mutagenicity?</p> <p>9 A. There are lots of standard</p> <p>10 tests, yes.</p> <p>11 Q. And Saed didn't use any of</p> <p>12 those, did he?</p> <p>13 MS. O'DELL: Object to the</p> <p>14 form.</p> <p>15 A. Well, he went directly to cells</p> <p>16 in culture to see what happened when they</p> <p>17 were treated with talc.</p> <p>18 BY MS. BOCKUS:</p> <p>19 Q. Does the amount of talc that</p> <p>20 Saed used compare in any way to the amount of</p> <p>21 talc that may reach a woman's ovary from</p> <p>22 perineal application?</p> <p>23 MS. O'DELL: Object to the</p> <p>24 form.</p>	<p>1 publication.</p> <p>2 BY MS. BOCKUS:</p> <p>3 Q. But the copy you have says on</p> <p>4 it "For Peer Review," correct?</p> <p>5 A. That's correct.</p> <p>6 Q. In the paragraph that we were</p> <p>7 looking at earlier, where you were talking</p> <p>8 about the startling regularity, later on in</p> <p>9 the paragraph you state that there</p> <p>10 is clearly -- sufficient particulate</p> <p>11 materials applied routinely to the perineum</p> <p>12 have ready access and in sufficient</p> <p>13 quantities to produce biologic responses in</p> <p>14 internal tissues.</p> <p>15 What internal tissues have you</p> <p>16 seen any study recording a biologic response</p> <p>17 to talc from?</p> <p>18 That was such a bad question,</p> <p>19 I'm going to ask it again.</p> <p>20 What internal tissues are you</p> <p>21 referring to there?</p> <p>22 A. Well, it says including --</p> <p>23 including ovaries and surrounding structures.</p> <p>24 By surrounding structures, I'm referring to</p>

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<p>1 the fallopian fimbriae and the epithelium of 2 the cavity. 3 Q. So -- and I know we've been 4 through this already, but to your knowledge, 5 there are no studies reporting biologic 6 responses to talc in the vagina, correct? 7 A. Not that I'm aware. 8 Q. You're not aware of any studies 9 reporting biologic responses to talc in the 10 cervix, correct? 11 A. Correct. 12 Q. Are you aware of any studies 13 reporting biologic response to the uterus? 14 A. No. 15 Q. Are you aware of any studies 16 reporting a biologic response in the 17 fallopian tubes? 18 MS. O'DELL: Object to the 19 form. 20 A. Well, I don't -- I'm not aware 21 of studies that draws a direct correlation 22 between exposure to talc and reaction in the 23 fallopian tubes. 24 ///</p>	<p>1 fallopian tube goes into that fluid and just 2 gets moved around all the time; is that 3 correct? 4 MS. O'DELL: Objection. Excuse 5 me. Objection, form. 6 A. Well, there's a fairly direct 7 presentation of the ovary, so there's not a 8 large space there, but there is a space. And 9 whatever goes into that space remains there. 10 Some of it may come back out. 11 BY MS. BOCKUS: 12 Q. Does the fallopian tube move 13 around during the month? 14 MS. O'DELL: Object to the 15 form. 16 A. I don't know. 17 MS. BOCKUS: I'm almost 18 finished. I'm going through all the 19 things that I've crossed off. 20 BY MS. BOCKUS: 21 Q. So I understand you correctly, 22 you have not identified a nonthreshold dose 23 of talc; is that correct? 24 MS. O'DELL: Object to the</p>
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<p>1 BY MS. BOCKUS: 2 Q. Okay. Is the ovary attached to 3 the fallopian tube? 4 A. It is -- it's in the proximity. 5 It's not directly attached. 6 Q. And what surrounds the ovary? 7 A. There's a structure that -- the 8 ovary itself? 9 Q. Yes. 10 A. There's an epithelial membrane 11 around the ovary, and -- 12 Q. And then what touches the 13 epithelial membrane? 14 A. Well, the fimbriae of the 15 fallopian tubes surround that and the rest of 16 it is just sort of space. 17 Q. Space. Is the space filled 18 with fluid? 19 A. It is. 20 Q. And is that fluid kind of 21 moving around? 22 A. All the time. 23 Q. All the time. 24 So things that come through the</p>	<p>1 form. 2 A. You mean a dose that is below a 3 safe threshold? 4 BY MS. BOCKUS: 5 Q. Correct. 6 A. No, I have not. 7 Q. Did you make any attempt to 8 extrapolate a de minimis risk level? 9 MS. O'DELL: Object to the 10 form. 11 A. I did not. It would be nice to 12 be able to do that, considering that most of 13 us have had talcum powder exposures of one 14 sort or another during our lives. And it's 15 something that seems to have been felt to be 16 very useful. 17 So it would be nice to be able 18 to do that exercise, but I haven't -- I have 19 not been prevented -- presented with the 20 information to approach that, nor am I aware 21 of anyone else who's been able to do it. 22 BY MS. BOCKUS: 23 Q. What information would you need 24 that you don't have?</p>

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<p style="text-align: right;">Page 326</p> <p>1 A. Well, we'd need -- we'd need</p> <p>2 dose information, first of all, which we</p> <p>3 don't have, to combine with the epidemiologic</p> <p>4 results.</p> <p>5 We need to define the</p> <p>6 mechanistic issues better than they are</p> <p>7 currently, and at that point I think we would</p> <p>8 be able to make some strong conclusions</p> <p>9 regarding potential thresholds of hazardous</p> <p>10 doses.</p> <p>11 Q. You would agree that the great</p> <p>12 majority of women who use talcum powder on a</p> <p>13 regular basis are never diagnosed with</p> <p>14 ovarian cancer, correct?</p> <p>15 A. I think that's true.</p> <p>16 Q. And it's also true that the</p> <p>17 majority of women diagnosed with ovarian</p> <p>18 cancer have never used talcum powder on a</p> <p>19 regular basis, correct?</p> <p>20 MS. O'DELL: Object to the</p> <p>21 form.</p> <p>22 A. I think it's a majority, but</p> <p>23 there's a significant number who have.</p> <p>24 ///</p>	<p style="text-align: right;">Page 328</p> <p>1 you? In other words, are they referred by</p> <p>2 other people?</p> <p>3 A. I have primarily a referral</p> <p>4 practice in toxicology.</p> <p>5 Q. In toxicology? And so what</p> <p>6 types of patients are referred to you?</p> <p>7 A. I have patients who are either</p> <p>8 workplace-related patients who have had</p> <p>9 chemical or other substance exposures. I</p> <p>10 also have a number of environmental exposure</p> <p>11 patients that I see.</p> <p>12 And I also have a number of --</p> <p>13 I also see a number of patients for general</p> <p>14 routine surveillance activities or required</p> <p>15 exams by regulation, either for licensure or</p> <p>16 certification.</p> <p>17 Q. Are you sent patients where the</p> <p>18 patient is trying to figure out why they got</p> <p>19 some disease?</p> <p>20 A. Sometimes. Usually the patient</p> <p>21 comes and tells me why they got the disease,</p> <p>22 and I go -- I talk to them about the</p> <p>23 possibilities, and we look at ways of</p> <p>24 confirming that or refuting it, or in many</p>
<p style="text-align: right;">Page 327</p> <p>1 BY MS. BOCKUS:</p> <p>2 Q. But the majority have not,</p> <p>3 correct?</p> <p>4 A. I would say more than 50% have</p> <p>5 not.</p> <p>6 Q. And would you agree that -- let</p> <p>7 me back up.</p> <p>8 When is the last time you</p> <p>9 conducted a pelvic exam?</p> <p>10 A. I haven't done one in a couple</p> <p>11 of years.</p> <p>12 Q. Under what circumstances did</p> <p>13 you do it two years ago?</p> <p>14 A. I see patients regularly, and</p> <p>15 in some cases, pelvic exams are either</p> <p>16 requested or indicated by the issue.</p> <p>17 Q. It's not something you do on a</p> <p>18 regular basis, correct?</p> <p>19 A. It's not.</p> <p>20 Q. And you do not -- what</p> <p>21 percentage of your patients are women?</p> <p>22 A. Probably half, maybe a little</p> <p>23 less than half.</p> <p>24 Q. How do patients come to see</p>	<p style="text-align: right;">Page 329</p> <p>1 cases, altering to a correct path of</p> <p>2 diagnostic investigation.</p> <p>3 Q. So sometimes a patient comes to</p> <p>4 you and says: I was exposed to this chemical</p> <p>5 and that's why I can't breathe?</p> <p>6 A. Yes.</p> <p>7 Q. And you do an investigation,</p> <p>8 and sometimes you say: You know what, that</p> <p>9 chemical has nothing to do with why you can't</p> <p>10 breathe?</p> <p>11 A. Sometimes that's the case.</p> <p>12 MS. O'DELL: Are you finished,</p> <p>13 sir? Are you finished?</p> <p>14 A. Well, I just wanted to add --</p> <p>15 BY MS. BOCKUS:</p> <p>16 Q. Sure.</p> <p>17 A. -- that although many times it</p> <p>18 is the case, and often the patient does</p> <p>19 understand that connection quite well,</p> <p>20 usually from a very closely connected cause</p> <p>21 and effect kind of relationship. It's when</p> <p>22 things are stretched out much more in time,</p> <p>23 and there is a likely suspect that may be an</p> <p>24 innocent bystander, that they may get</p>



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<p>1 confused.</p> <p>2 Q. Have you ever been referred a</p> <p>3 patient to determine why they have ovarian</p> <p>4 cancer?</p> <p>5 A. No.</p> <p>6 Q. Do you know of any methodology</p> <p>7 accepted in the medical community for</p> <p>8 determining why an individual woman has</p> <p>9 developed ovarian cancer?</p> <p>10 MS. O'DELL: Object to the</p> <p>11 form.</p> <p>12 A. Other than genetic testing that</p> <p>13 identifies specific risks and history taking</p> <p>14 that might identify other known risk factors</p> <p>15 for that woman, there is -- I don't believe</p> <p>16 that there is any good or prescribed</p> <p>17 procedure for making that determination, and</p> <p>18 there is no reasonable screening test that</p> <p>19 can find that cancer when it is at an early</p> <p>20 stage.</p> <p>21 BY MS. BOCKUS:</p> <p>22 Q. Do you believe that obesity</p> <p>23 causes ovarian cancer?</p> <p>24 A. It certainly seems to be</p>	<p>1 for that population of women?</p> <p>2 A. Well, it varies depending on</p> <p>3 the research study that has been done, but</p> <p>4 I've seen odds ratios or relative risks all</p> <p>5 the way from 1 or even below to very high</p> <p>6 numbers, like 20 to 50.</p> <p>7 Q. 20.0, is that what you're</p> <p>8 saying?</p> <p>9 A. Yes, 20.0.</p> <p>10 Q. Not 1.2, but 20.0?</p> <p>11 A. Correct.</p> <p>12 Q. Okay.</p> <p>13 A. Which is a -- which would be 20</p> <p>14 times the normal risk without the exposure.</p> <p>15 Q. Okay. So we've got obesity and</p> <p>16 heavy exposure to asbestos. Any other risk</p> <p>17 factors that you're familiar with?</p> <p>18 MS. O'DELL: Objection --</p> <p>19 excuse me. Objection, misstates the</p> <p>20 doctor's testimony.</p> <p>21 You may answer.</p> <p>22 THE WITNESS: Okay.</p> <p>23 A. Other risk factors for ovarian</p> <p>24 cancer would include things like early</p>
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<p>1 related to the occurrence of ovarian cancer</p> <p>2 from a statistical point of view.</p> <p>3 Q. What is the increase in a</p> <p>4 woman's risk of ovarian cancer if she's obese</p> <p>5 compared to a nonobese woman?</p> <p>6 A. In terms of numbers?</p> <p>7 Q. Yes, sir.</p> <p>8 A. I don't know the -- I don't</p> <p>9 know the numbers.</p> <p>10 Q. What other risk factors are you</p> <p>11 familiar with for ovarian cancer?</p> <p>12 A. Well, certainly work with</p> <p>13 asbestos is a risk factor, and we have a</p> <p>14 number of studies that have shown women</p> <p>15 working in the asbestos industry or women who</p> <p>16 are married to asbestos workers and have</p> <p>17 secondary exposure presumably from that are</p> <p>18 at risk for ovarian cancer.</p> <p>19 There are --</p> <p>20 Q. Let me stop you just one</p> <p>21 second.</p> <p>22 A. Yes.</p> <p>23 Q. What percentage -- what is</p> <p>24 their relative risk or what is the odds ratio</p>	<p>1 menarche, late menopause, never being</p> <p>2 pregnant. These are some of the more common</p> <p>3 risk factors that are identified.</p> <p>4 There are genetic risk factors</p> <p>5 that are known, like the BRCA mutations,</p> <p>6 which confer an increased risk. Family</p> <p>7 history.</p> <p>8 BY MS. BOCKUS:</p> <p>9 Q. Do you know the odds ratios of</p> <p>10 any of the risk factors that you just</p> <p>11 identified of never having children, having</p> <p>12 early menarche or late menopause?</p> <p>13 A. Right offhand, I don't know</p> <p>14 what those odds ratios -- the range of those</p> <p>15 are.</p> <p>16 Q. Do you know if any of those</p> <p>17 odds ratios exceed 1.3?</p> <p>18 A. I think they do.</p> <p>19 Q. Does that lead you to conclude</p> <p>20 that those things cause ovarian cancer?</p> <p>21 A. It certainly argues for that.</p> <p>22 The -- there's a risk factor that derives</p> <p>23 from something. You need a mechanism to fill</p> <p>24 in the blank.</p>

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<p>1 But also, some of these risk</p> <p>2 factors are so common in the population that</p> <p>3 we can concoct large cohort studies that will</p> <p>4 have -- can have very low relative risks,</p> <p>5 like on the order of 1.3 or even lower, and</p> <p>6 still a significant result.</p> <p>7 So the more common a factor is,</p> <p>8 the easier it is to do the research and the</p> <p>9 more likely you'll get a finding that's</p> <p>10 relevant to interpretation.</p> <p>11 Q. What pushes a talc particle</p> <p>12 from the perineum into the vagina?</p> <p>13 A. Probably mostly the law of mass</p> <p>14 action. It simply goes of its own volition.</p> <p>15 These small particles are always in motion</p> <p>16 through molecular forces, and they simply</p> <p>17 move in all directions, and some of them move</p> <p>18 in that direction.</p> <p>19 Q. Would that be true for any</p> <p>20 small particles applied to a woman's</p> <p>21 perineum?</p> <p>22 A. Yes.</p> <p>23 Q. Are you board certified in</p> <p>24 medical toxicology?</p>	<p>1 Q. So you think you just ran into</p> <p>2 her?</p> <p>3 A. Yeah.</p> <p>4 Q. The other people that you</p> <p>5 identified that you discussed your report</p> <p>6 with, did you ask them to read your report?</p> <p>7 A. I asked them to look at parts</p> <p>8 of it, early drafts of it to let me know if</p> <p>9 they thought I was making sense.</p> <p>10 Q. And did they offer you comments</p> <p>11 and suggestions for changes in your paper?</p> <p>12 A. Not really. Mostly they gave</p> <p>13 me a pat on the back and said: I think</p> <p>14 you're doing a good job, just sort of beef</p> <p>15 this part up, and what do you mean by this,</p> <p>16 maybe I could rephrase that. That sort of</p> <p>17 thing.</p> <p>18 Q. Did they give you written</p> <p>19 suggestions?</p> <p>20 A. No, these were all verbal</p> <p>21 comments.</p> <p>22 Q. Had you given them a hard copy</p> <p>23 of the portions of your report that you</p> <p>24 wanted them to comment on?</p>
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<p>1 A. I'm not. I started practicing</p> <p>2 medical toxicology before there was a board</p> <p>3 in the specialty, and I've been grandfathered</p> <p>4 into the profession as a member of the</p> <p>5 American College of Medical Toxicology.</p> <p>6 Q. How long did you talk to</p> <p>7 Dr. Ness about her paper?</p> <p>8 A. About her paper, probably a</p> <p>9 minute and a half. About all kinds of other</p> <p>10 things, for a while.</p> <p>11 Q. What other kinds of things?</p> <p>12 A. Mostly personal things that had</p> <p>13 nothing to do with talc or this case.</p> <p>14 Q. How long do you think that</p> <p>15 conversation was?</p> <p>16 A. Well, with Dr. Ness, nothing</p> <p>17 lasts very long, so I would say ten minutes</p> <p>18 at the most.</p> <p>19 Q. Okay. Did you call her?</p> <p>20 A. No. She's -- she comes and</p> <p>21 goes in the same building where I office, and</p> <p>22 my office is just on the opposite side of the</p> <p>23 floor of hers, and I see her sometimes in</p> <p>24 passing or in the elevator.</p>	<p>1 A. Yes.</p> <p>2 Q. And they didn't redline it or</p> <p>3 make -- draw arrows or anything like that for</p> <p>4 you?</p> <p>5 A. I think actually George Delclos</p> <p>6 did draw some -- or make some notes on there</p> <p>7 and hand it back to me, and I incorporated</p> <p>8 those into my electronic version.</p> <p>9 Q. Do you still have George's</p> <p>10 notes to you?</p> <p>11 A. No, I don't.</p> <p>12 Q. Is he the only one out of the</p> <p>13 people that you asked to look at it who gave</p> <p>14 you handwritten notes?</p> <p>15 A. Yes, I think so.</p> <p>16 Q. Have you seen the term</p> <p>17 "intrinsic elimination system" regarding the</p> <p>18 ovary in any of the publications that you've</p> <p>19 read?</p> <p>20 A. I don't know, I may have.</p> <p>21 Q. Can you think of one in</p> <p>22 particular that discusses that characteristic</p> <p>23 of -- that you believe relates to the ovary?</p> <p>24 A. Well, the migration papers</p>

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<p>1 discuss migration to the ovary. It would 2 probably be a talc paper, though. I don't 3 recall seeing it anywhere. 4 Q. Did you consult any gynecologic 5 textbooks? 6 A. No, I didn't. I may have 7 looked at some diagrams on the Internet. 8 Q. Okay. Did you consult any 9 gynecologic oncology textbooks? 10 A. Not textbooks, no. 11 Q. Do you know the position of the 12 Society of Gynecologic Oncologists on the 13 question of whether does talc increase a 14 woman's risk for ovarian cancer? 15 A. No, I don't. 16 Q. Would that be important to you 17 to know their position? 18 A. No, I don't think so. 19 Q. Do you know the position of 20 ACOG on whether the use of -- perineal use of 21 talc increases a woman's risk of ovarian 22 cancer? 23 A. I don't know that either. 24 That's not something I've looked at.</p>	<p>1 that? 2 A. Well, I saw this actually when 3 I first started this process, and I think 4 Dr. Longo was involved in that activity, 5 where they modeled the -- the application of 6 talcum powder and did some calculations based 7 on the amount of substance that was used, and 8 they measured it in things like shakes and -- 9 and then quantified the amount that was lost 10 from the container to determine what an 11 application amount was. 12 I don't think they were able to 13 go beyond that point in the modeling process. 14 Q. You didn't see anything that 15 Dr. Longo did that attempted to quantify the 16 amount of talcum powder from a single shake 17 that ended up on a woman's perineum, did you? 18 MS. O'DELL: Object to the 19 form. 20 A. I -- you know, I don't know the 21 answer to that, simply because I don't 22 recall, but I wouldn't be surprised that 23 there was an attempt made to do that. But 24 beyond that, I don't think anything would be</p>
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<p>1 Q. Would that be important to you? 2 A. No. 3 Q. Do you have any scientific text 4 that suggests that an inert particle resides 5 on the ovary longer than it does in the 6 cervix? 7 A. Well, I have -- I have a paper 8 that relates to the time for dissolution of a 9 particle in biological fluids, which would go 10 to the length of time a particle of talc 11 remains in the ovary once it gets there. 12 But I don't have -- I don't 13 know that I have a scientific paper that 14 specifically says that it stays in the ovary 15 longer than it stays in the cervix. 16 Q. You testified that you 17 understand there have been some attempts to 18 quantify the amount of talc, I guess from a 19 single use, that ends up on the perineum. 20 Did I understand that 21 correctly? 22 A. Yes. 23 Q. Can you tell me what those 24 attempts are, who did them, where did you see</p>	<p>1 successful. 2 These were clothed subjects, so 3 that adds another factor to the calculation. 4 BY MS. BOCKUS: 5 Q. Is that the only experiment 6 that you're familiar with that you've seen 7 anywhere that attempts to quantify the amount 8 of talcum powder from a single use that ends 9 up actually on a woman's perineum? 10 A. There was another part of that 11 study where they applied it to underwear with 12 the same sort of calculation process. It was 13 all part of the same modeling process. 14 Q. And do you recall what 15 percentage of the talc applied to the 16 underwear ended up adhered to the woman's 17 perineum? 18 MS. O'DELL: Object to the 19 form. 20 A. I don't think -- I don't think 21 they measured the amount that adhered to the 22 perineum. I think what they were interested 23 in was proximity. 24 ///</p>

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<p style="text-align: right;">Page 342</p> <p>1 BY MS. BOCKUS:</p> <p>2 Q. Okay. Can you tell me the</p> <p>3 names of the environmental websites that have</p> <p>4 been talking about IARC revisiting their</p> <p>5 classification of talc?</p> <p>6 A. There are -- there are a number</p> <p>7 of Twitter feeds and websites that carry on</p> <p>8 this kind of discussion. Science Interest is</p> <p>9 one of them. I think IARC Watch is another</p> <p>10 one. I have -- I get e-mails about some of</p> <p>11 these and end up going into them for a period</p> <p>12 of time and seeing if they have anything</p> <p>13 interesting going on. Some of them are</p> <p>14 searchable.</p> <p>15 And then I get e-mails from the</p> <p>16 ones that I visit about other ones. So I</p> <p>17 spend as much of my time deleting these</p> <p>18 e-mails without reading them as I do actually</p> <p>19 viewing the material.</p> <p>20 Q. So fair to say this is just</p> <p>21 chatter you've seen on the Internet in these</p> <p>22 different chat rooms or Twitter accounts that</p> <p>23 you visit from time to time?</p> <p>24 A. It's all Internet based, yes.</p>	<p style="text-align: right;">Page 344</p> <p>1 A. Uh-huh.</p> <p>2 Q. And echoing what my colleagues</p> <p>3 have said today, if there's at any point I</p> <p>4 ask a question that you do not understand,</p> <p>5 just stop me and ask me to rephrase it or let</p> <p>6 me know otherwise, okay?</p> <p>7 A. I will.</p> <p>8 Q. Thanks.</p> <p>9 So going back shortly to your</p> <p>10 scope of work, do you teach any coursework on</p> <p>11 talc or ovarian cancer?</p> <p>12 A. I teach some general courses.</p> <p>13 Up until last spring I taught a general</p> <p>14 environmental health course for graduate</p> <p>15 students in the Master of Public Health</p> <p>16 program at the School of Public Health, and</p> <p>17 in that course we did touch on things like</p> <p>18 environmental exposures that would include</p> <p>19 minerals of various varieties, but it was</p> <p>20 very cursory.</p> <p>21 Q. And was that curriculum</p> <p>22 specific to environmental and industrial</p> <p>23 products or minerals as opposed to consumer</p> <p>24 products?</p>
<p style="text-align: right;">Page 343</p> <p>1 MS. BOCKUS: Okay. I think</p> <p>2 that's all I have. Thank you.</p> <p>3 MS. O'DELL: Why don't we take</p> <p>4 a short break. We've been going about</p> <p>5 two hours.</p> <p>6 MR. ZELLERS: Do you have</p> <p>7 questions?</p> <p>8 MS. APPEL: I do, but --</p> <p>9 MS. O'DELL: Yeah, do you</p> <p>10 have --</p> <p>11 MS. APPEL: I don't have a lot.</p> <p>12 MS. O'DELL: Okay. Sure. Why</p> <p>13 don't you go ahead, and then we'll</p> <p>14 take a break. We have been going</p> <p>15 about two hours, but, Renée, please.</p> <p>16 If you're okay, Doctor.</p> <p>17 THE WITNESS: I'm fine.</p> <p>18 EXAMINATION</p> <p>19 BY MS. APPEL:</p> <p>20 Q. It's been a while since we did</p> <p>21 introductions, so just as a reminder, my name</p> <p>22 is Renée Appel and I'm here on behalf of</p> <p>23 Seyfarth Shaw and I represent Personal Care</p> <p>24 Products, counsel.</p>	<p style="text-align: right;">Page 345</p> <p>1 A. We actually did touch on other</p> <p>2 consumer products as well in terms of the</p> <p>3 significant environmental problem that we</p> <p>4 have currently, but -- regarding the huge</p> <p>5 volume of personal care products that goes</p> <p>6 into our aqueous waste stream and how that's</p> <p>7 affecting the aquatic environment as well as</p> <p>8 groundwater and so forth.</p> <p>9 As a matter of fact, in that</p> <p>10 course, as part of the culmination of the</p> <p>11 course, there are student workgroups that</p> <p>12 develop presentations on a particular topic,</p> <p>13 and the topic of personal care products has</p> <p>14 been a favorite choice for the last several</p> <p>15 years.</p> <p>16 Q. But your curriculum did not</p> <p>17 include talc among those products?</p> <p>18 MS. O'DELL: Object to the</p> <p>19 form.</p> <p>20 A. I think talc may have been</p> <p>21 represented as an individual mineral on a</p> <p>22 slide that listed many minerals.</p> <p>23 BY MS. APPEL:</p> <p>24 Q. Earlier today you had mentioned</p>

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<p style="text-align: right;">Page 346</p> <p>1 a shared file. Is that shared file something 2 that you created or plaintiffs' counsel 3 created? 4 A. It's something that I think 5 plaintiffs' counsel created for me to be able 6 to send them documents and receive documents, 7 and it's a Dropbox share file. It's -- at 8 this point I think it might be mine. I'm not 9 sure just exactly who's in charge of that or 10 runs it, but it comes directly into my 11 Dropbox file. 12 I know I had to boost my 13 subscription to Dropbox in order to hold the 14 2 gigabytes of data from -- that we were 15 putting into there. 16 Q. Is there anything from that 17 Dropbox file that you relied upon in forming 18 your opinion in your report that you have not 19 already provided to defense counsel? 20 A. No, everything that was in that 21 Dropbox that I've relied upon has been 22 identified here. 23 Q. Who prepared Exhibit B to your 24 report?</p>	<p style="text-align: right;">Page 348</p> <p>1 accumulating information in the draft as a 2 result of my review of the literature. 3 So if I had to separate things 4 out, I would say that, by far, the -- most of 5 the time has been spent in reading articles 6 and reviewing them and comparing them with 7 other articles, and a comparatively small 8 amount of time has been spent in drafting the 9 report. 10 Although there were some 11 strings of activity which was all report 12 drafting basically, I would say probably 85 13 to 90% was research, seeking articles, 14 reading them, reviewing them, and comparing 15 them. 16 Q. And you also testified earlier 17 today that you discarded information not 18 relevant or interesting to you. 19 How did you make that 20 determination? 21 MS. O'DELL: Objection to the 22 form. 23 A. The things that I discarded did 24 not seem to fit into my gestalt of the</p>
<p style="text-align: right;">Page 347</p> <p>1 A. Exhibit B was a list of 2 articles from the research literature 3 included in the Dropbox that -- that I think 4 does not -- I don't know whether it includes 5 the referenced articles from my report or 6 not, but they were all part of the same 7 collection of research articles and 8 supplemental documents. 9 Q. And my question, Dr. Carson, 10 was: Who prepared that exhibit? 11 A. The exhibit was prepared by the 12 plaintiffs' attorneys. 13 Q. You testified earlier that you 14 have spent approximately 150 to 180 hours in 15 your expert retention work; is that correct? 16 A. Correct. 17 Q. Can you estimate what portion 18 of that time was spent researching versus 19 what portion of time was spent actually 20 drafting your expert report? 21 A. Those two things are in some 22 ways difficult to separate because I would -- 23 I was writing my report the entire time that 24 I was reviewing the research materials and</p>	<p style="text-align: right;">Page 349</p> <p>1 understanding of this question and the 2 opinions that I wanted to express. They may 3 have been interesting information and useful 4 for some purposes, but not for this 5 particular report. 6 BY MS. APPEL: 7 Q. Was some of that information 8 that you discarded based on relevancy or that 9 you determined was not of interest 10 information that may have been different than 11 your opinions? 12 A. No. I didn't discard any 13 research because the opinions provided 14 differed from my own. These were things that 15 really were irrelevant to the question. 16 I remember finding an awful lot 17 of geological research stuff that just didn't 18 have any relevance to the question. 19 Because I used such broad 20 search terms, I ended up pulling in a whole 21 lot of things that were not necessary or 22 useful, and those just went in the trash. 23 Q. You testified earlier that you 24 have not treated any patients with ovarian</p>



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<p>1 cancer; is that correct?</p> <p>2 A. Not knowingly, not because of</p> <p>3 ovarian cancer.</p> <p>4 Q. Have you ever diagnosed any</p> <p>5 patients with ovarian cancer?</p> <p>6 A. I think when I was in medical</p> <p>7 school or residency, I probably participated</p> <p>8 in that on several patients.</p> <p>9 Q. Have you ever instructed a</p> <p>10 patient not to use talcum powder products?</p> <p>11 A. I hadn't up until a month or</p> <p>12 two ago, but I've been asking people about --</p> <p>13 about their talcum powder use just as sort of</p> <p>14 a curiosity in mentioning that there might be</p> <p>15 a risk.</p> <p>16 Q. Do you ask that of all your</p> <p>17 patients?</p> <p>18 A. I would say no, I don't usually</p> <p>19 ask the men that, but I probably should.</p> <p>20 Q. And have the responses to those</p> <p>21 inquiries of your female patients and their</p> <p>22 talcum product use, has that been used at all</p> <p>23 to inform your opinions in this case?</p> <p>24 A. I don't think so. There have</p>	<p>1 usually administer to my patients, and I have</p> <p>2 plans to add that as a question in my</p> <p>3 environmental exposure survey. Which I</p> <p>4 haven't done already, but will as soon as I</p> <p>5 get the opportunity.</p> <p>6 BY MS. APPEL:</p> <p>7 Q. You testified earlier today</p> <p>8 that you do not believe there was ever a</p> <p>9 point where talcum powder did not contain</p> <p>10 asbestos, correct?</p> <p>11 A. Yes.</p> <p>12 Q. So in forming your opinion in</p> <p>13 your report, you've assumed that the talcum</p> <p>14 powder does contain asbestos, correct?</p> <p>15 MS. O'DELL: Object to the</p> <p>16 form.</p> <p>17 A. Well, I think the asbestos</p> <p>18 contribution to this whole issue is important</p> <p>19 and significant. I think there's good</p> <p>20 evidence that whatever we call talcum powder</p> <p>21 is carcinogenic and responsible for ovarian</p> <p>22 cancer -- as a cause of ovarian cancer, but I</p> <p>23 can't say -- I can't say based on looking at</p> <p>24 a can of talcum powder whether or not it has</p>
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<p>1 been very few that I have asked that question</p> <p>2 in the last month or so. I've had a limited</p> <p>3 clinic schedule during this period of time.</p> <p>4 We had the holidays and other things, so I</p> <p>5 haven't seen that many patients.</p> <p>6 And of those I've asked about</p> <p>7 it, it seems about half of the women have had</p> <p>8 a history of using talcum powder.</p> <p>9 Q. And of those women that are</p> <p>10 using -- have told you that they have used</p> <p>11 talcum powder, are those women diagnosed with</p> <p>12 ovarian cancer?</p> <p>13 A. No.</p> <p>14 Q. So suffice to say the inquiry</p> <p>15 that you've asked of your female patients</p> <p>16 concerning their talcum use has nothing to do</p> <p>17 with the question that you've been posed in</p> <p>18 this particular litigation?</p> <p>19 MS. O'DELL: Object to the</p> <p>20 form.</p> <p>21 A. Actually, that's the only</p> <p>22 reason I've been asking them. It's not</p> <p>23 something that came to mind earlier. I have</p> <p>24 an environmental exposure survey that I</p>	<p>1 asbestos in it or how much.</p> <p>2 BY MS. APPEL:</p> <p>3 Q. Have you formed an opinion,</p> <p>4 Dr. Carson, on whether there's a relationship</p> <p>5 between pure talc and ovarian cancer?</p> <p>6 MS. O'DELL: Objection to form.</p> <p>7 A. My opinion is there is, but</p> <p>8 that's based on the research reports that</p> <p>9 have been done using so-called pure talc,</p> <p>10 talcum powder, and I am -- I -- my opinion is</p> <p>11 that it's unlikely that those test substances</p> <p>12 actually are pure talc.</p> <p>13 BY MS. APPEL:</p> <p>14 Q. So again, Dr. Carson, in</p> <p>15 forming your opinions, you have done so on</p> <p>16 the belief that all the talc powder products</p> <p>17 or just pure talc do, in fact, contain</p> <p>18 asbestos?</p> <p>19 MS. O'DELL: Objection to form.</p> <p>20 A. It is my opinion that all</p> <p>21 talcum powder products do contain a certain</p> <p>22 amount of asbestos, even if it's extremely</p> <p>23 small.</p> <p>24 My opinions have been formed</p>

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<p>1 based on research that has been done on</p> <p>2 available talcum powder products, so I guess</p> <p>3 the research would have been done using some</p> <p>4 small quantity of asbestos in all of those</p> <p>5 studies.</p> <p>6 BY MS. APPEL:</p> <p>7 Q. You also testified today,</p> <p>8 Dr. Carson, that you have found in your</p> <p>9 research that there is a dose-response</p> <p>10 relationship between talcum powder products</p> <p>11 and ovarian cancer, correct?</p> <p>12 A. Well, a number of the research</p> <p>13 studies, the epidemiology studies have shown</p> <p>14 positive and statistically significant</p> <p>15 trends.</p> <p>16 Q. And those trends that you're</p> <p>17 relying on, Dr. Carson, actually only relate</p> <p>18 to duration and frequency, correct?</p> <p>19 MS. O'DELL: Objection to form.</p> <p>20 A. Yes, they do relate to duration</p> <p>21 and frequency, which is the only surrogate we</p> <p>22 have for dose.</p> <p>23 BY MS. APPEL:</p> <p>24 Q. So in forming your opinion,</p>	<p>1 classified by IARC.</p> <p>2 BY MS. APPEL:</p> <p>3 Q. But it's your opinion that a</p> <p>4 possible carcinogen -- strike that.</p> <p>5 It's your opinion that any dose</p> <p>6 of a possible carcinogen can cause cancer?</p> <p>7 MS. O'DELL: Objection to form.</p> <p>8 A. Yes, I think there is a</p> <p>9 potential for any dose of a carcinogen to</p> <p>10 cause a cancer. There's also the principle</p> <p>11 that the lower the dose, the less likely it</p> <p>12 is, the lower the risk is for developing a</p> <p>13 cancer.</p> <p>14 BY MS. APPEL:</p> <p>15 Q. And your opinion extends to</p> <p>16 those particles that have not been identified</p> <p>17 as carcinogens, but may just be possible</p> <p>18 carcinogens?</p> <p>19 A. I think talc has been</p> <p>20 identified as a carcinogen.</p> <p>21 Q. So you disagree with the IARC</p> <p>22 classification?</p> <p>23 A. The IARC 2B classification is a</p> <p>24 carcinogenic classification.</p>
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<p>1 Dr. Carson, you have not determined a level</p> <p>2 of harmful exposure to talcum powder products</p> <p>3 that causes ovarian cancer?</p> <p>4 A. That's correct.</p> <p>5 Q. And you did not conduct a dose</p> <p>6 assessment between talcum powder products and</p> <p>7 ovarian cancer, correct?</p> <p>8 MS. O'DELL: Objection to form.</p> <p>9 A. Well, I did not conduct a</p> <p>10 dose-response, but I am of the opinion that</p> <p>11 there's no safe threshold for exposure to a</p> <p>12 carcinogen until such a threshold is</p> <p>13 identified.</p> <p>14 BY MS. APPEL:</p> <p>15 Q. And does that include</p> <p>16 Category 2B particles as well --</p> <p>17 MS. O'DELL: Objection.</p> <p>18 BY MS. APPEL:</p> <p>19 Q. -- that it's a possible</p> <p>20 carcinogen?</p> <p>21 MS. O'DELL: Objection to form.</p> <p>22 A. It includes the talc that was</p> <p>23 discussed in the IARC report. Those</p> <p>24 conclusions have nothing to do with how it's</p>	<p>1 Q. But you recognize and -- that</p> <p>2 there are different types of categories that</p> <p>3 IARC has?</p> <p>4 A. Yes.</p> <p>5 Q. And that -- it's that talc that</p> <p>6 does not contain asbestos was not, in fact,</p> <p>7 categorized as a Group 1, correct?</p> <p>8 A. That's correct.</p> <p>9 Q. So is it your opinion, then,</p> <p>10 looking at other 2B-classified particles by</p> <p>11 IARC, that any exposure to pickled vegetables</p> <p>12 would cause cancer?</p> <p>13 A. We know that there are a number</p> <p>14 of carcinogens that are regularly present in</p> <p>15 things like the food that we eat. We have a</p> <p>16 rule that says that those things should not</p> <p>17 be included in food items unless they have</p> <p>18 passed a particular exemption process.</p> <p>19 Pickled vegetables are</p> <p>20 something that people have been familiar with</p> <p>21 and have been using for hundreds of years,</p> <p>22 and things like talcum powder are things that</p> <p>23 have been used for -- well, at least a</p> <p>24 hundred years, but probably considerably</p>

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<p>1 longer.</p> <p>2 And whether or not those things</p> <p>3 are carcinogens, there are people who still</p> <p>4 find enough value to offset that factor in</p> <p>5 their own lives and they can make their own</p> <p>6 decisions regarding their exposure.</p> <p>7 It's a similar concept to</p> <p>8 people who choose to smoke. Although smoking</p> <p>9 is an addictive behavior, people are aware</p> <p>10 that it causes disease, including cancer, and</p> <p>11 yet they continue to smoke.</p> <p>12 We continue to eat grilled</p> <p>13 meats, even -- most of us know now that</p> <p>14 grilled meats contain polycyclic aromatic</p> <p>15 hydrocarbons that are known carcinogens, some</p> <p>16 of them Group 1 carcinogens, and yet, we</p> <p>17 continue that practice and revel in it even.</p> <p>18 That's just part of what we do as human</p> <p>19 beings.</p> <p>20 The issue with talc is a</p> <p>21 complicated question in my mind. I think I'm</p> <p>22 straying a bit from your -- from your</p> <p>23 question, but baby powder, for example, is</p> <p>24 something that has a very -- very dear sort</p>	<p>1 A. Pickled vegetables.</p> <p>2 Q. -- I had was pickled</p> <p>3 vegetables, and the question was whether or</p> <p>4 not is your opinion that any consumption of</p> <p>5 pickled vegetables causes cancer?</p> <p>6 MS. O'DELL: Objection to form.</p> <p>7 A. I believe the primary form of</p> <p>8 cancer that's potentially related with</p> <p>9 pickled vegetables is stomach cancer, and</p> <p>10 there is a slight increase in risk with</p> <p>11 consumption of pickled vegetables for</p> <p>12 everybody who does it.</p> <p>13 BY MS. APPEL:</p> <p>14 Q. Okay. And what about gasoline</p> <p>15 or exhaust?</p> <p>16 A. Gasoline meaning the fuel?</p> <p>17 Q. Yes.</p> <p>18 A. Well, gasoline used to contain</p> <p>19 a significant amount of benzene, which was</p> <p>20 a -- determined to be a carcinogenic</p> <p>21 substance. In recent years, most of the</p> <p>22 benzene has been removed from gasoline, so</p> <p>23 now there's very little benzene in vapors</p> <p>24 that are expressed.</p>
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<p>1 of relationship to many people.</p> <p>2 The experience with that from</p> <p>3 the time you were a baby until you grow up</p> <p>4 and have your own children involves a lot of</p> <p>5 the use of baby powder in many, many</p> <p>6 households. That's a difficult relationship</p> <p>7 to break. It's psychological as much as it</p> <p>8 is knowledge based.</p> <p>9 So as we go through the</p> <p>10 decades, we get a little safer and safer as</p> <p>11 we begin to peel these habits, these</p> <p>12 dangerous habits away from our lives and</p> <p>13 accept better lifestyles.</p> <p>14 MR. ZELLERS: Move to strike as</p> <p>15 nonresponsive.</p> <p>16 MS. APPEL: Respectfully --</p> <p>17 MS. BOCKUS: Is he finished?</p> <p>18 MR. ZELLERS: I don't think so.</p> <p>19 THE WITNESS: I can go on.</p> <p>20 BY MS. APPEL:</p> <p>21 Q. Yeah. My question was more</p> <p>22 narrow, and I was analogizing your opinion as</p> <p>23 to talcum powder and was asking about other</p> <p>24 2B classifications, and my example --</p>	<p>1 But there's a small amount. So</p> <p>2 when you inhale gasoline vapors, you are also</p> <p>3 exposing yourself to a very small amount of a</p> <p>4 carcinogenic substance.</p> <p>5 As far as exhaust is concerned,</p> <p>6 diesel exhaust in particular has -- contains</p> <p>7 particles that have been identified through</p> <p>8 various bioassays to be carcinogenic. So</p> <p>9 diesel exhaust is regulated as a carcinogenic</p> <p>10 material, even though we continue to be</p> <p>11 exposed.</p> <p>12 Q. And it's your opinion that any</p> <p>13 exposure that we all incur related to exhaust</p> <p>14 will cause us cancer?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 A. It will cause an increase in</p> <p>17 risk of cancer. Doesn't necessarily cause</p> <p>18 cancer in everybody.</p> <p>19 BY MS. APPEL:</p> <p>20 Q. Okay. Are you aware that Saed</p> <p>21 has been hired by plaintiffs' counsel in this</p> <p>22 litigation?</p> <p>23 A. I am. And when I misspoke</p> <p>24 earlier today regarding the Taher paper, I</p>

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<p style="text-align: right;">Page 362</p> <p>1 was thinking of the Saed paper.</p> <p>2 Q. Okay. Last question: Counsel</p> <p>3 was asking you about the migration process,</p> <p>4 and you mentioned that in the course of</p> <p>5 particles moving up the track, that some of</p> <p>6 it may come back out even after it reaches</p> <p>7 the fluid surrounding the ovaries, correct?</p> <p>8 A. Yes.</p> <p>9 Q. So if particles have the</p> <p>10 ability to come back out, that means that</p> <p>11 there is, in fact, some form of an intrinsic</p> <p>12 elimination system.</p> <p>13 A. Well, if this is all based on</p> <p>14 mass action, it would not necessarily be an</p> <p>15 intrinsic elimination system, and I believe</p> <p>16 that talc particles, once they produce an</p> <p>17 inflammatory response, they become</p> <p>18 sequestered within that inflammatory milieu</p> <p>19 and no longer are available for movement back</p> <p>20 out into the fluid.</p> <p>21 I'm sure there's some small</p> <p>22 percentage of them that are an exception to</p> <p>23 that, but for the majority, that would be the</p> <p>24 case.</p>	<p style="text-align: right;">Page 364</p> <p>1 CERTIFICATE</p> <p>2 I, MICHAEL E. MILLER, Fellow of</p> <p>3 the Academy of Professional Reporters,</p> <p>4 Registered Diplomate Reporter, Certified</p> <p>5 Realtime Reporter, Certified Court Reporter</p> <p>6 and Notary Public, do hereby certify that</p> <p>7 prior to the commencement of the examination,</p> <p>8 ARCH I. "CHIP" CARSON, M.D., Ph.D. was duly</p> <p>9 sworn by me to testify to the truth, the</p> <p>10 whole truth and nothing but the truth.</p> <p>11 I DO FURTHER CERTIFY that the</p> <p>12 foregoing is a verbatim transcript of the</p> <p>13 testimony as taken stenographically by and</p> <p>14 before me at the time, place and on the date</p> <p>15 hereinbefore set forth, to the best of my</p> <p>16 ability.</p> <p>17 I DO FURTHER CERTIFY that pursuant</p> <p>18 to FRCP Rule 30, signature of the witness was</p> <p>19 not requested by the witness or other party</p> <p>20 before the conclusion of the deposition.</p> <p>21 I DO FURTHER CERTIFY that I am</p> <p>22 neither a relative nor employee nor attorney</p> <p>23 nor counsel of any of the parties to this</p> <p>24 action, and that I am neither a relative nor</p> <p>employee of such attorney or counsel, and</p> <p>that I am not financially interested in the</p> <p>action.</p> <p>MICHAEL E. MILLER, FAPR, RDR, CRR</p> <p>Fellow of the Academy of Professional Reporters</p> <p>NCRA Registered Diplomate Reporter</p> <p>NCRA Certified Realtime Reporter</p> <p>Certified Court Reporter</p> <p>Notary Public in and for the</p> <p>State of Texas</p> <p>My Commission Expires: 7/9/2020</p> <p>Dated: January 22, 2019</p>
<p style="text-align: right;">Page 363</p> <p>1 MS. APPEL: Okay. That's all I</p> <p>2 have. Thank you, Dr. Carson.</p> <p>3 MS. TINSLEY: I don't have any</p> <p>4 questions.</p> <p>5 MS. O'DELL: Okay. Why don't</p> <p>6 we take a short break.</p> <p>7 THE VIDEOGRAPHER: Off the</p> <p>8 record at 5:37, end of Tape 4.</p> <p>9 (Recess taken, 5:37 p.m. to</p> <p>10 5:44 p.m.)</p> <p>11 THE VIDEOGRAPHER: We're on the</p> <p>12 record at 5:44, beginning of Tape 5.</p> <p>13 MS. O'DELL: Dr. Carson, I</p> <p>14 don't have any questions, so this will</p> <p>15 conclude your deposition.</p> <p>16 MR. ZELLERS: Thank you,</p> <p>17 Doctor.</p> <p>18 THE VIDEOGRAPHER: Going off</p> <p>19 the record, 5:44. End of deposition,</p> <p>20 end of Tape 5.</p> <p>21 (Proceedings recessed at</p> <p>22 5:45 p.m.)</p> <p>23 --o0o--</p> <p>24</p>	<p style="text-align: right;">Page 365</p> <p>1 INSTRUCTIONS TO WITNESS</p> <p>2</p> <p>3 Please read your deposition over</p> <p>4 carefully and make any necessary corrections.</p> <p>5 You should state the reason in the</p> <p>6 appropriate space on the errata sheet for any</p> <p>7 corrections that are made.</p> <p>8 After doing so, please sign the</p> <p>9 errata sheet and date it.</p> <p>10 You are signing same subject to</p> <p>11 the changes you have noted on the errata</p> <p>12 sheet, which will be attached to your</p> <p>13 deposition.</p> <p>14 It is imperative that you return</p> <p>15 the original errata sheet to the deposing</p> <p>16 attorney within thirty (30) days of receipt</p> <p>17 of the deposition transcript by you. If you</p> <p>18 fail to do so, the deposition transcript may</p> <p>19 be deemed to be accurate and may be used in</p> <p>20 court.</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>

Arch I. "Chip" Carson, M.D., Ph.D.

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1	ERRATA	1	LAWYER'S NOTES
2	PAGE LINE CHANGE	2	
3		3	PAGE LINE
4	REASON: _____	4	_____
5		5	_____
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23		23	_____
24	REASON: _____	24	_____

  

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1	ACKNOWLEDGMENT OF DEPONENT
2	
3	
4	I, ARCH I. "CHIP" CARSON, M.D.,
5	Ph.D., do hereby certify that I have read the
6	foregoing pages and that the same is a
7	correct transcription of the answers given by
8	me to the questions therein propounded,
9	except for the corrections or changes in form
10	or substance, if any, noted in the attached
11	Errata Sheet.
12	
13	_____
14	ARCH I. "CHIP" CARSON, M.D., Ph.D. DATE
15	
16	Subscribed and sworn to before me this
17	_____ day of _____, 20 ____.
18	My commission expires: _____
19	
20	_____
21	Notary Public
22	
23	
24	

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